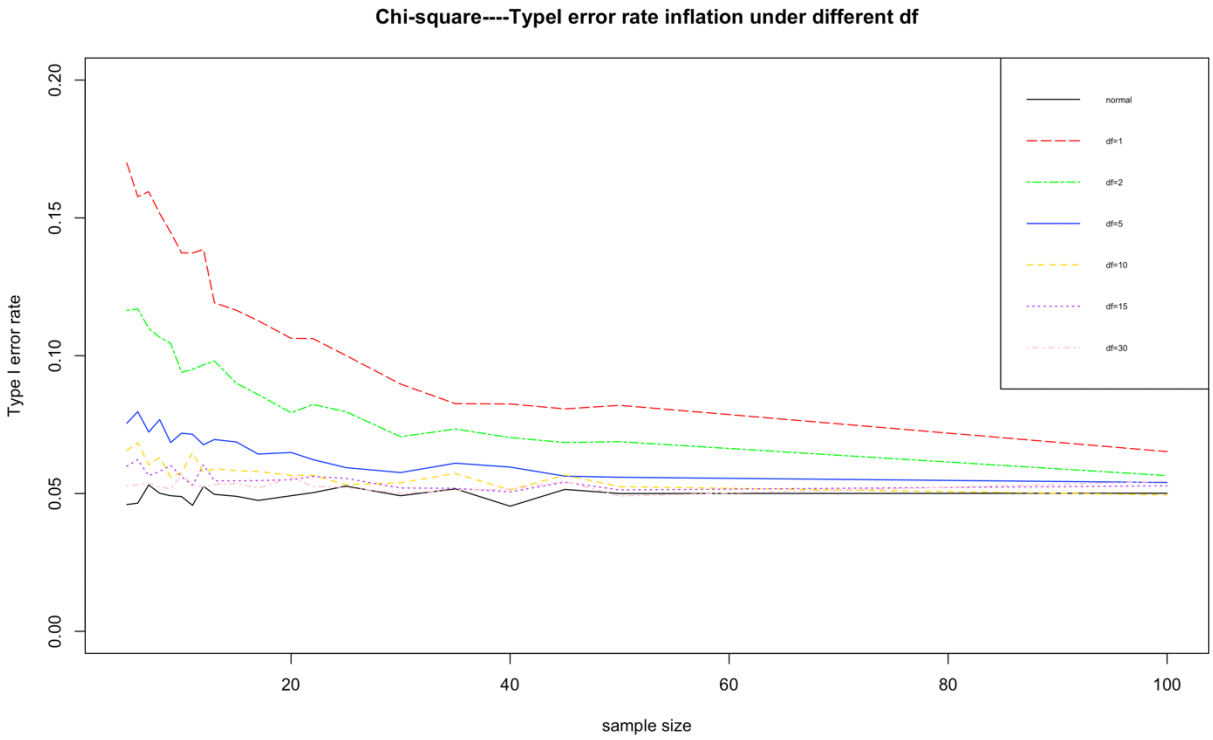
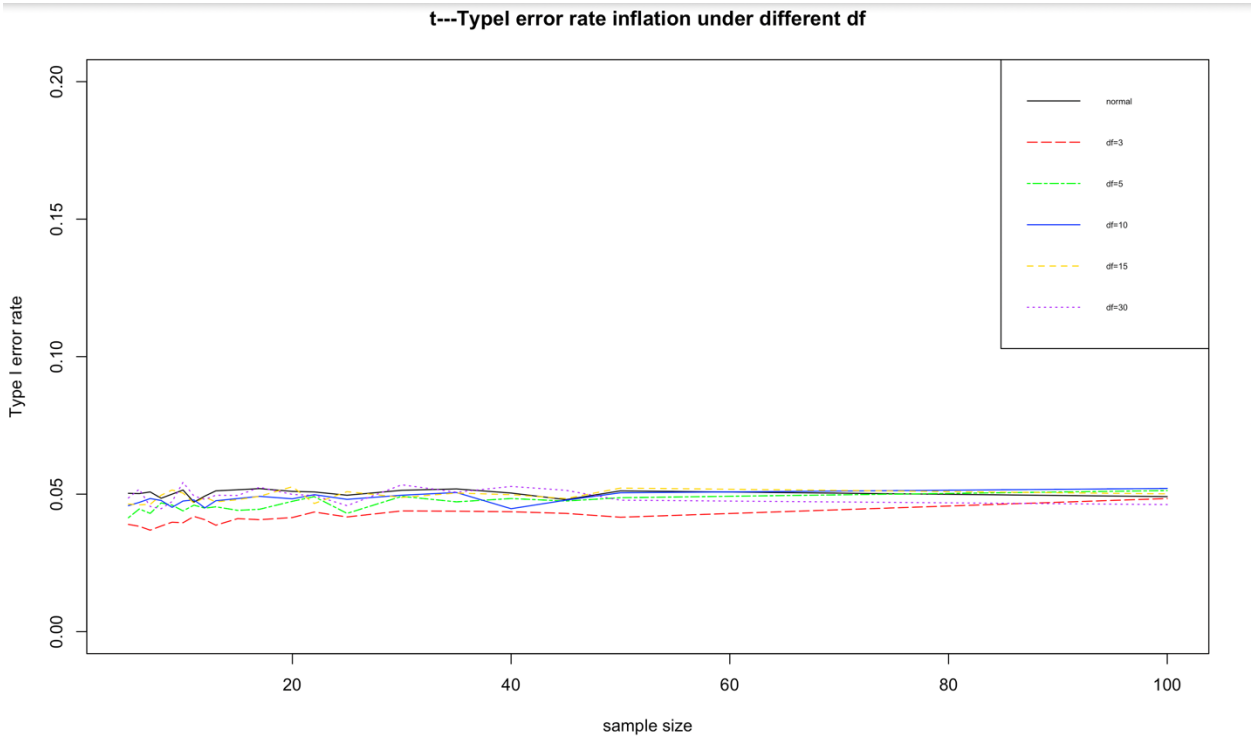
Summary

1. Chi-square Distribution (positively skewed)



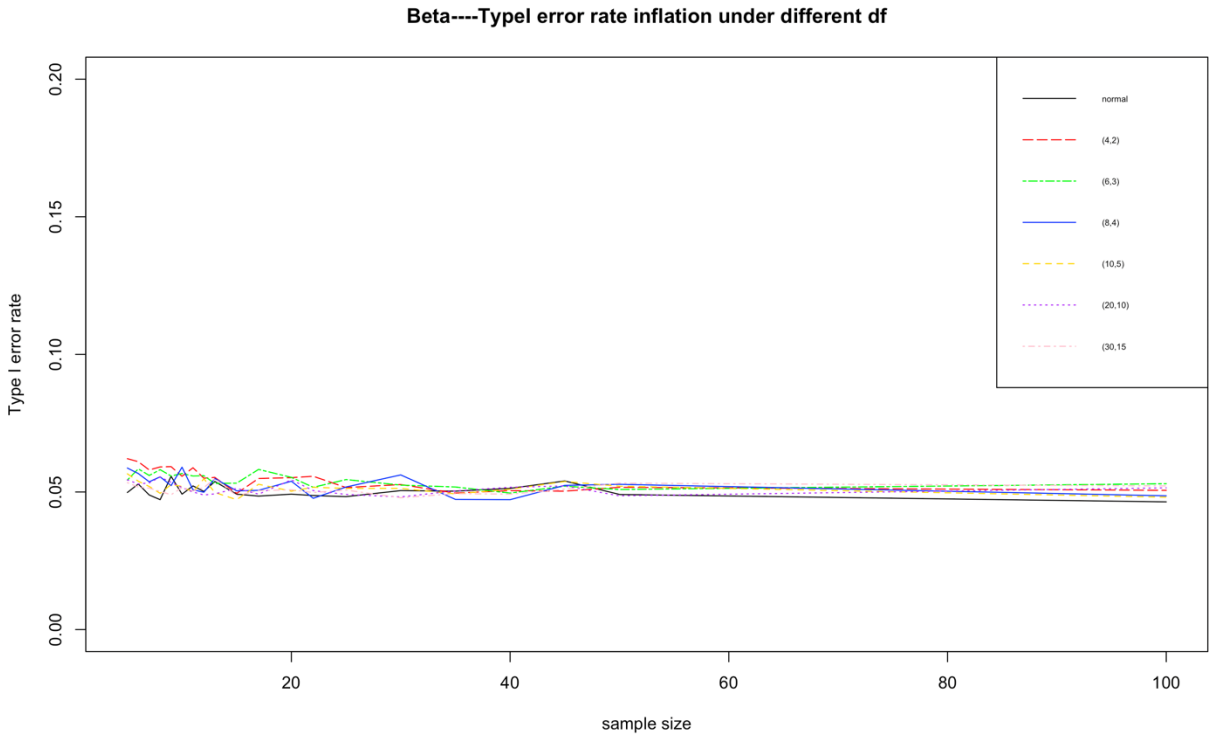
- while power of one-sample t-test increase, TypeI error rate increase.
- with sample size increase, violation of normality will be less of a problem, TypeI error rate inflation decrease.
- With df approaching 30, chi-square distribution becomes more similar with normal, the inflation degree decrease.

2. Student t-Distribution (heavy-tailed)



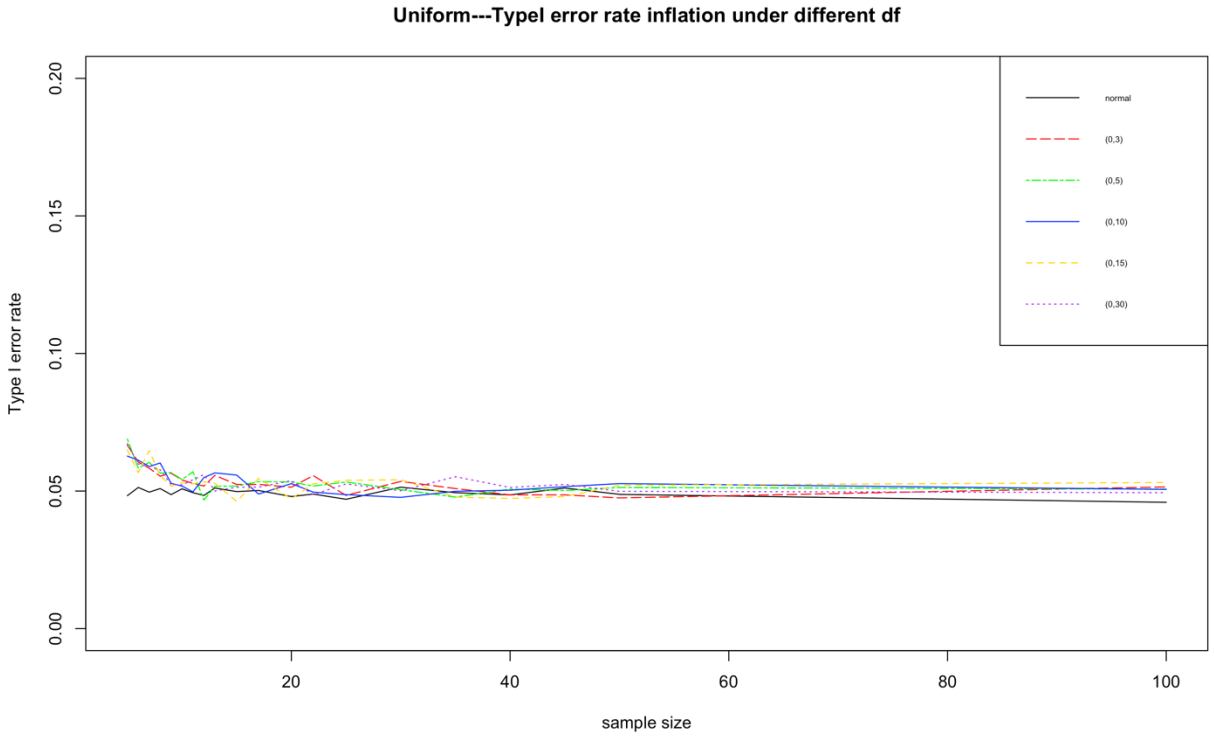
- while TypeI error rate decreased, power of one-sample t-test decreased.
- With df approaching 30, t becomes more similar with normal, the typeI error rate of t-distribution is becoming more similar with normal.

3. Beta Distribution (make it negatively skewed through the value of two parameters)



- the typeI error rate of all combinations of two parameters are very close to normal

4. Uniform Distribution



- the typeI error rates are very close to normal, but slightly higher.
- while power of one-sample t-test increase, TypeI error rate increase.