1 Classical Normal Linear Regression Model

Normality assumption for $u$

- Implications for the OLS estimator $\hat{\beta}_2$
- $u_i \sim i.i.d.N(0, \sigma^2)$
- Why the normal distribution for $u$?
  - Analytical simplicity
  - Central limit theorem

Properties of OLS estimators under the normality assumption

- $\hat{\beta}_2 \sim N(\beta_2, \text{var}(\hat{\beta}_2))$
- Standardized $Z$ distribution
- $\hat{\sigma}^2$ distribution

Maximum likelihood estimation

Monte Carlo experiment: consumption function