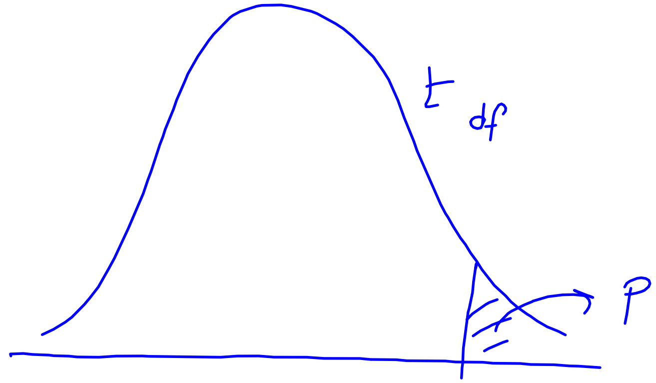
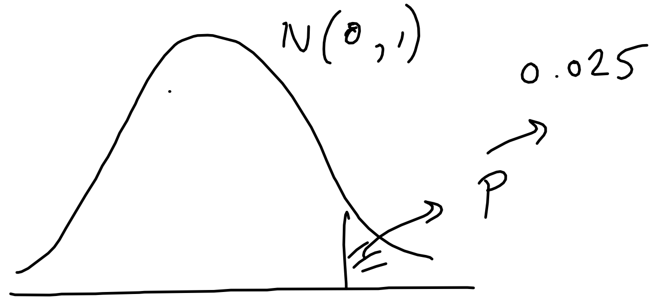




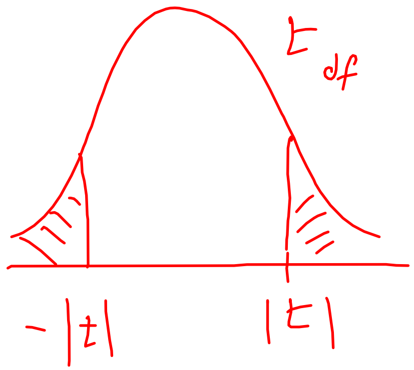
invnormal(1 − p) : 1.96

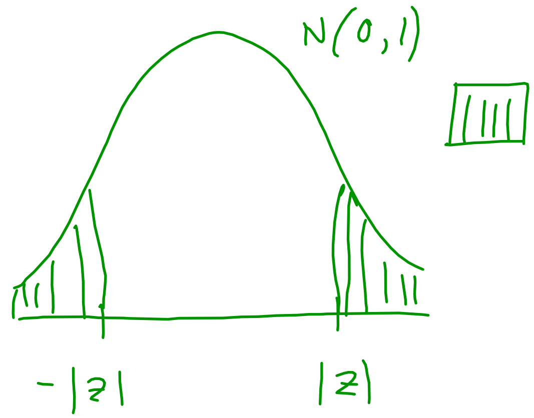
$1 - p \to 0.975$

Stata: invttail(df, p) → 2.06

df → 25

p → 0.025





−1.96 1.96

Stata: 2*ttail(df, |t|) : 0.06

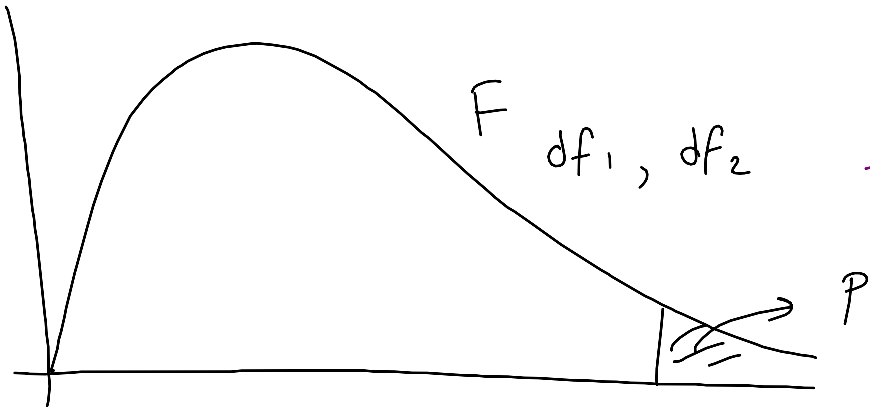
df → 25

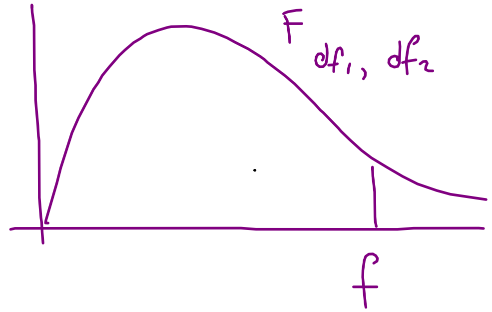
|t| → 1.96

Stata:

2*(1 − normal(|z|)) : 0.05

|z| → 1.96





$\mathrm{Ftail}(df_1, df_2, f) : 0.05$

2   60   3.15

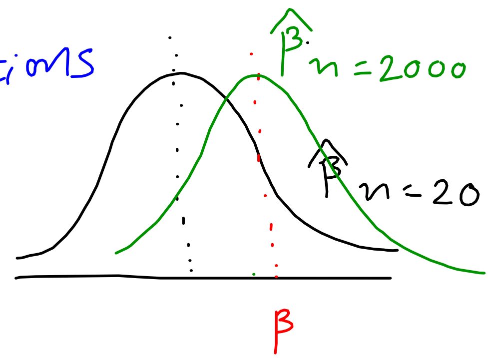
$\mathrm{invFtail}(df_1, df_2, p) : 3.15$

2   60   0.05

Ch. 5

Consistency: ① No asymptotic bias under slightly weaker assumptions

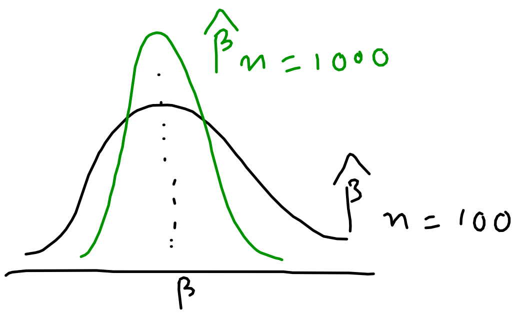
→ in large samples



$$E(u) = 0$$

$$\text{corr.}(x, u) = 0$$

② For unbiased $\hat{\beta}_j$ → as $n \uparrow$ distribⁿ of $\hat{\beta}_j$ more concentrated around β_j.



$$\frac{SSR}{n-(k+1)} \rightarrow \text{unbiased for } \sigma^2$$

$$\frac{SSR}{n} \rightarrow \text{biased but consistent}$$

Asymptotic Normality

$u \rightarrow$ normal

$y \mid x_1 \ldots x_k \longrightarrow$ normal

often not the case.

under ass^{n}s reqd. for unbiasedness & homosk.

$$\frac{\hat{\beta}_j - \beta_j}{se(\hat{\beta}_j)} \overset{a}{\sim} \text{Normal}(0,1)$$

$$\overset{a}{\sim} t_{n-k-1}$$

$\overset{a}{\sim}$: asymptotically distributed as

F statistics : also have approximate F dist. with large n