

# MI CRECONOMETRIA - LEZIONE 17 (LAB 60)

## LDVA. DTA

$$y_i, X_i \quad i = 1, \dots, N = 200$$

$$DGDP \text{ - process } y_i = \beta_0 + \beta_1 X_i + u_i$$

DATA  $\downarrow$  CENNETRIK (DANI SIMULATI)  $\beta_2$

SCATTER  $y$   $X$ ,  $y_{\text{line}}(0)$

GENCODE:  $y = y^*$   $SE y^* > 0$   
 $= 0$   $SE y^* \leq 0$

GEN  $y_{\text{GEN}} = 0$

PERIODE  $y_{\text{GEN}} = y$   $SE y > 0$

TRANSFORMS:  $y = y^*$  SE  $y^* > 0$   
NULL SE  $y^* \leq 0$

GEN  $y_{TRU} = \cdot$

MERGE  $y_{TRU} = y$  IF  $y > 0$

REG  $y$   $X$

↳ TUTO 12 CAPICORTE

OLS "Non Distanto"

REG  $y$   $X$

↳ OLS SU DATA CENSURATI (Distanto)  
↳ OLS (Non censored)

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REC 1700 X  
↳ as su dari Transisi (Disianjo)

## SOLUTION 1 : MLE

$$\text{CENSURA} : \log L = \sum_{i \in y_{>0}} \log f(y_i) + \sum_{i \in y_{=0}} \log(1 - p_i)$$
$$\text{TARGET } y, X, \mathcal{L}(\theta)$$

$$\text{TRANSFORMANTS} : \log L = \sum_{i \in y_{>0}} \log f(y_i | y_{i>0})$$
$$\text{TRANSFORMER } y, X, \mathcal{L}(\theta)$$

SOLUTIONS 2 :  $\alpha S$  "Garnern" " (Mills Ratio)

TRANSFORMED :  $E(y_i^* | y_i^* = 0) = \alpha_i \beta + \sigma \frac{\phi_i}{\Phi_i}$

POVE  $\phi_i \equiv \phi\left(\frac{x_i \beta}{\sigma}\right)$   
 $\Phi_i \equiv \Phi\left(\frac{x_i \beta}{\sigma}\right)$

GENOVA:  $E(y_i^*) = \Phi_i x_i \beta + \sigma \phi_i$

PROBIT PER SINDONE  $\phi_i \in \Phi_i$

$$D_i = 1 \quad \text{SE } y_i^* > 0 \quad \rightarrow \text{PROBIT}$$

$$= 0 \quad \text{SE } y_i^* \leq 0 \quad \downarrow \sqrt{\frac{\beta}{\sigma}} \quad \downarrow$$

$$E(D_i) = \Phi(x_i \beta)$$



$$\begin{aligned} \hat{\Phi}_i &\equiv \Phi(x_i, \hat{\beta}_i) \\ \Phi_i &\equiv \Phi(x_i, \beta_i) \end{aligned}$$

$$\begin{aligned} \text{GEN DUMMY} &= y > 0 \\ \text{P118BIT DUMMY} &\times \Rightarrow \sqrt{\frac{\beta_1}{\beta_0}} \in \sqrt{\frac{\beta_2}{\beta_0}} \end{aligned}$$

Preis  $X_{BP}$ ,  $X_B$  ↴

$$X_{BP,i} = \hat{\beta}_1 + \hat{\beta}_2 X_{i,}$$

GEN  $\hat{\beta}_i = \text{KANNALDEN}(X_{BP})$

GEN  $\hat{\beta}_i = \text{KANNAL}(X_{BP})$

$$\text{GEN miss} = p_i / F_i$$

REG YTRV X MISS (TRANSLATED)

$$\text{GEN Fix} = F_i * X$$

REG YGEN Fix  $p_i$   $F_i$ , NOCONST  
(CENSUM)

