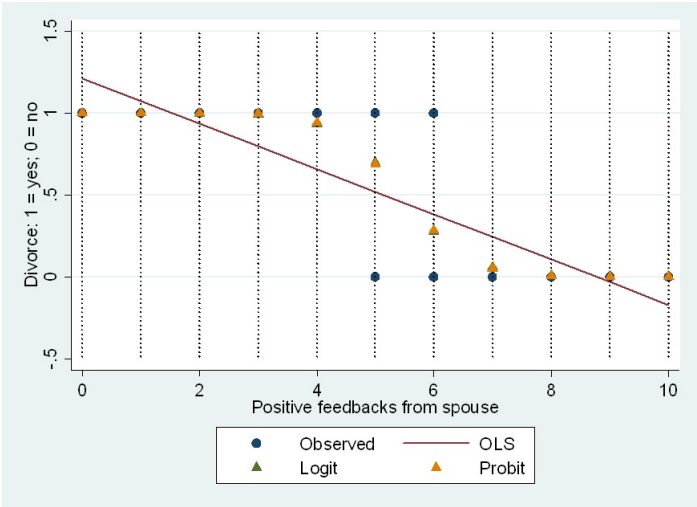


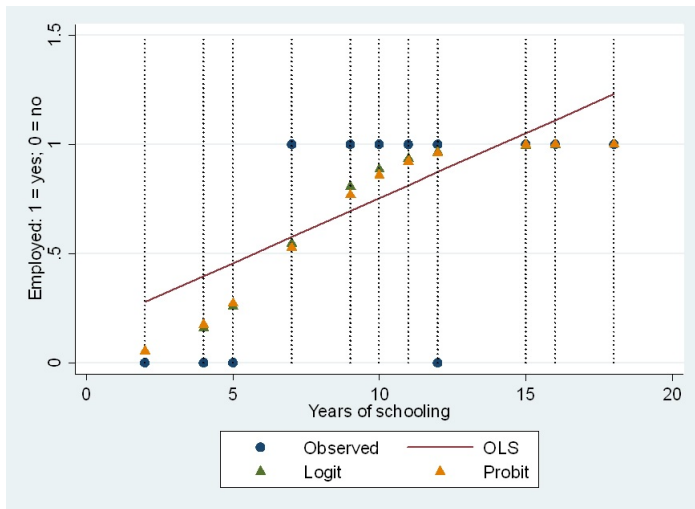
# Binary Dependent Variables

- 1 Examples
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- 4 Logit
- 5 Maximum likelihood estimation
- 6 Interpretation

# Examples



# Examples (cont.)



# Latent Variable Framework

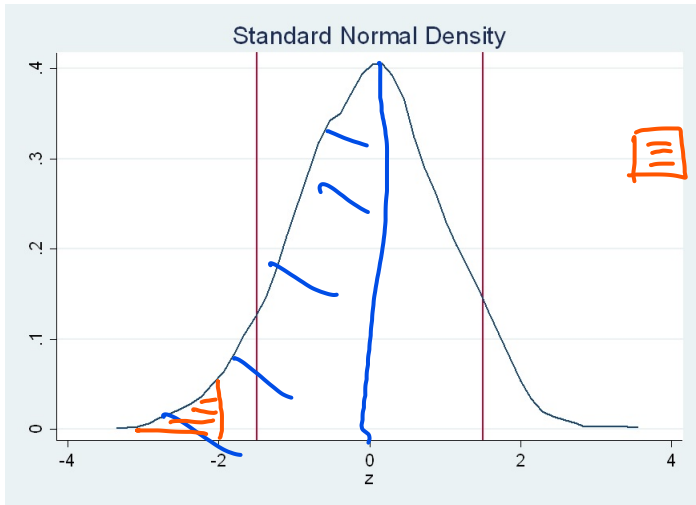
# Probit

$u$  follows  $N(0, 1)$

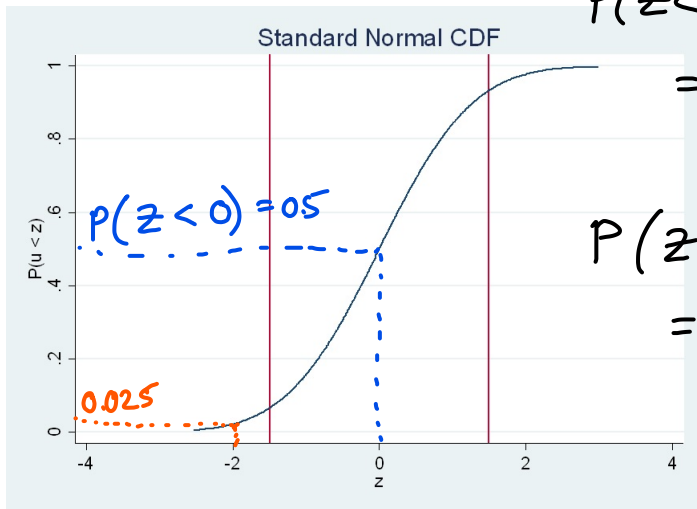
$$\boxed{\text{=}} = P(z < 0)$$

$$= 0.5.$$

$$\boxed{\text{=}} = 0.025.$$



## Probit (cont.)



$$P(z < 0)$$

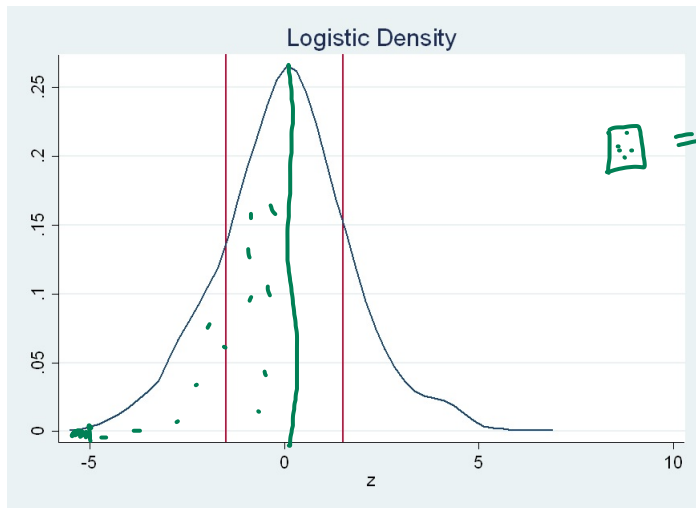
$$= \Phi(0)$$

$$P(z < -2)$$

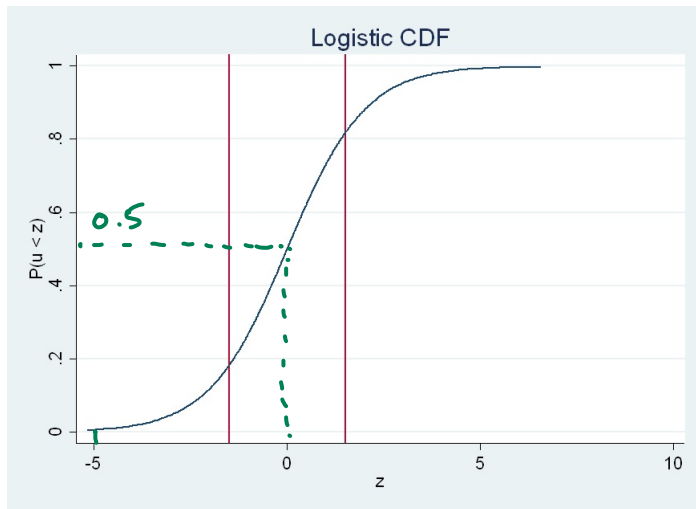
$$= \Phi(-2)$$

# Logit

$u$  follows logistic distribution



## Logit (cont.)

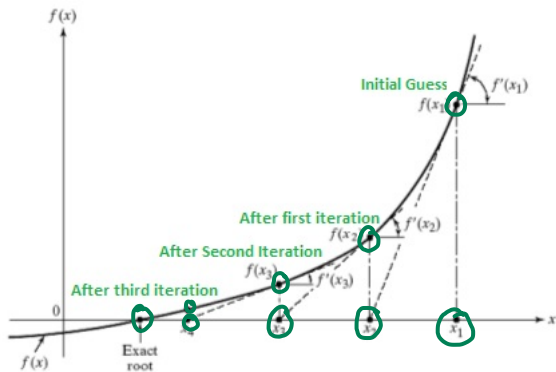




# Maximum Likelihood Estimation

# Maximum Likelihood Estimation (cont.)

## Nonlinear optimization



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# Interpretation