

Marginal Effects in the Probit model

Change in $Pr(y_i = 1 x_i) = \Phi(x_i'\beta)$	Marginal effect at the mean	Average marginal effect (AME)
Continuous variable $\phi(x_i'\beta)\beta_k$	$\phi(\bar{x}'\beta)\beta_k$	$\frac{1}{n} \sum_{i=1}^n \phi(x_i'\beta)\beta_k$
Dummy variable $\Phi(\beta_1 + \beta_2 x_{2i} + \dots + \beta_{k-1} x_{k-1,i} + \beta_k)$ $-\Phi(\beta_1 + \beta_2 x_{2i} + \dots + \beta_{k-1} x_{k-1,i})$ $\Phi(x_i'\beta x_k = 1) - \Phi(x_i'\beta x_k = 0)$ $Pr(y_i = 1 x_i, x_k = 1) - Pr(y_i = 1 x_i, x_k = 0)$	$\Phi(\bar{x}'\beta x_k = 1) - \Phi(\bar{x}'\beta x_k = 0)$	$\frac{1}{n} \sum_{i=1}^n [\Phi(x_i'\beta x_k = 1) - \Phi(x_i'\beta x_k = 0)]$
Discrete variable $\Phi(\beta_1 + \beta_2 x_{2i} + \dots + \beta_{k-1} x_{k-1,i} + \beta_k(c_k + 1))$ $-\Phi(\beta_1 + \beta_2 x_{2i} + \dots + \beta_{k-1} x_{k-1,i} + \beta_k c_k)$ $\Phi(x_i'\beta x_k = c_k + 1) - \Phi(x_i'\beta x_k = c_k)$ $Pr(y_i = 1 x_i, x_k = c_k + 1)$ $-Pr(y_i = 1 x_i, x_k = c_k)$	$\Phi(\bar{x}'\beta x_k = c_k + 1) - \Phi(\bar{x}'\beta x_k = c_k)$	$\frac{1}{n} \sum_{i=1}^n [\Phi(x_i'\beta x_k = c_k + 1) - \Phi(x_i'\beta x_k = c_k)]$