$$\mathbf{y} = f(\mathbf{x}) + \boldsymbol{\epsilon}, \ f(\mathbf{x}) = \mathbf{X}\boldsymbol{\beta}$$

$$y_i = \sum_j X_{ij}\beta_j + \epsilon_i$$

$$\langle y_i \rangle = \left\langle \sum_j X_{ij} \beta_j \right\rangle + \left\langle \epsilon_i \right\rangle$$

$$\left\langle \sum_{j} X_{ij} eta_{j} 
ight
angle = \sum_{j} X_{ij} eta_{j} = \mathbf{X}_{i,*} oldsymbol{eta}$$

$$\langle \epsilon_i \rangle = 0 \text{ siden } \epsilon_i \sim N(\mu = 0, \ \sigma^2)$$

$$\langle y_i \rangle = \mathbf{X}_{i,*} \boldsymbol{\beta}$$