

(5)

Residuals r_i or e_i

for animals with BW y_i and BC x_i

$$\begin{aligned} r_i = e_i &= y_i - E(y_i) = y_i - \hat{y}_i \\ &= y_i - [b_0 + b_1 \cdot x_i] = y_i - b_0 - b_1 x_i \end{aligned}$$

$$e_1 = y_1 - b_0 - b_1 x_1 = 471 - b_0 - b_1 \cdot 176$$

$$e_2 = y_2 - b_0 - b_1 x_2 = 463 - b_0 - b_1 \cdot 177$$

$$e_{10} = y_{10} - b_0 - b_1 x_{10} = 541 - b_0 - b_1 \cdot 184$$

Sum of Squares of Residuals (SSQR)

$$SSQR = e_1^2 + e_2^2 + \dots + e_{10}^2$$

$$= (y_1 - b_0 - b_1 x_1)^2 + (y_2 - b_0 - b_1 x_2)^2 + \dots + (y_{10} - b_0 - b_1 x_{10})^2$$