IDS 702

Assessing the linear regression model

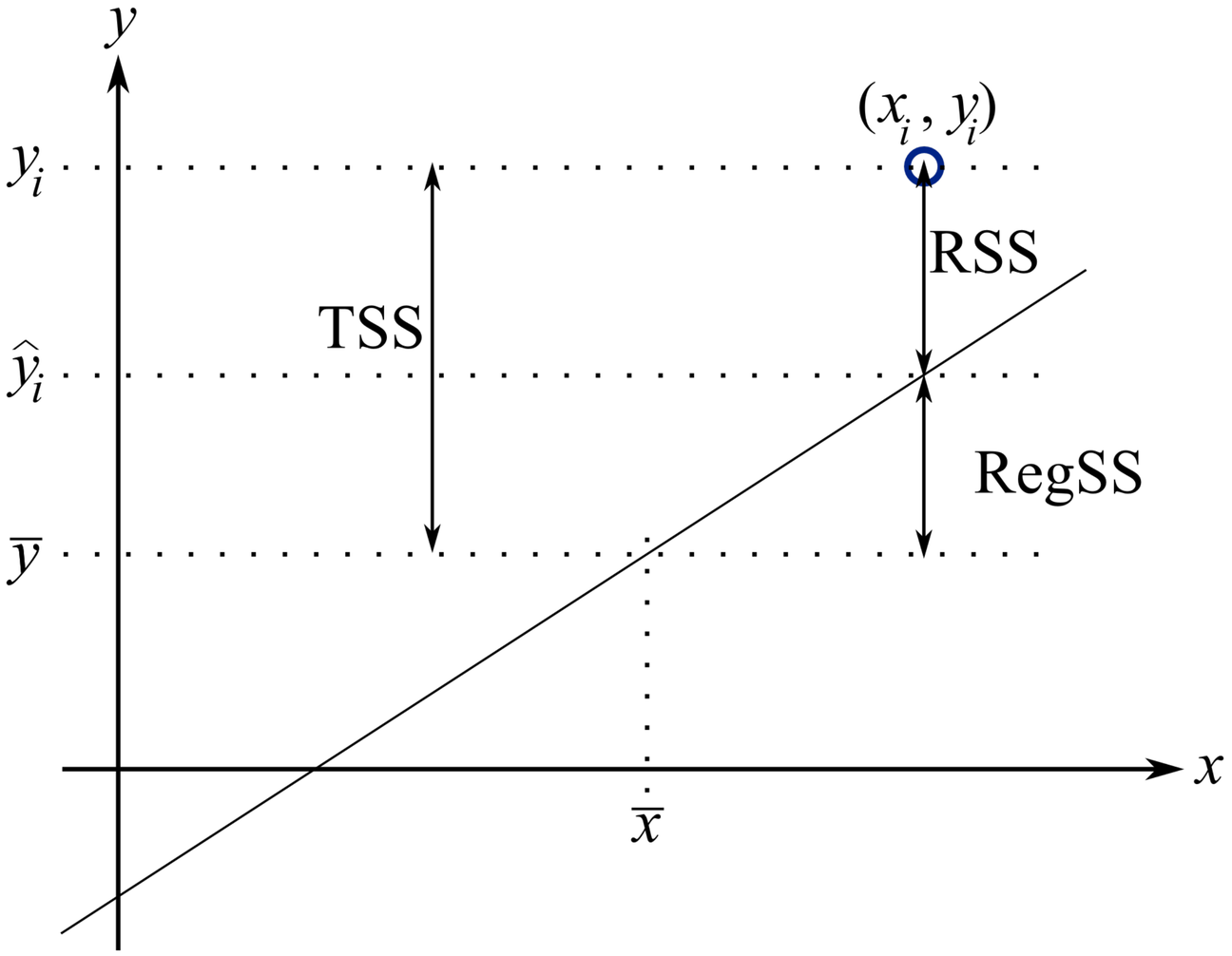
Mean square error

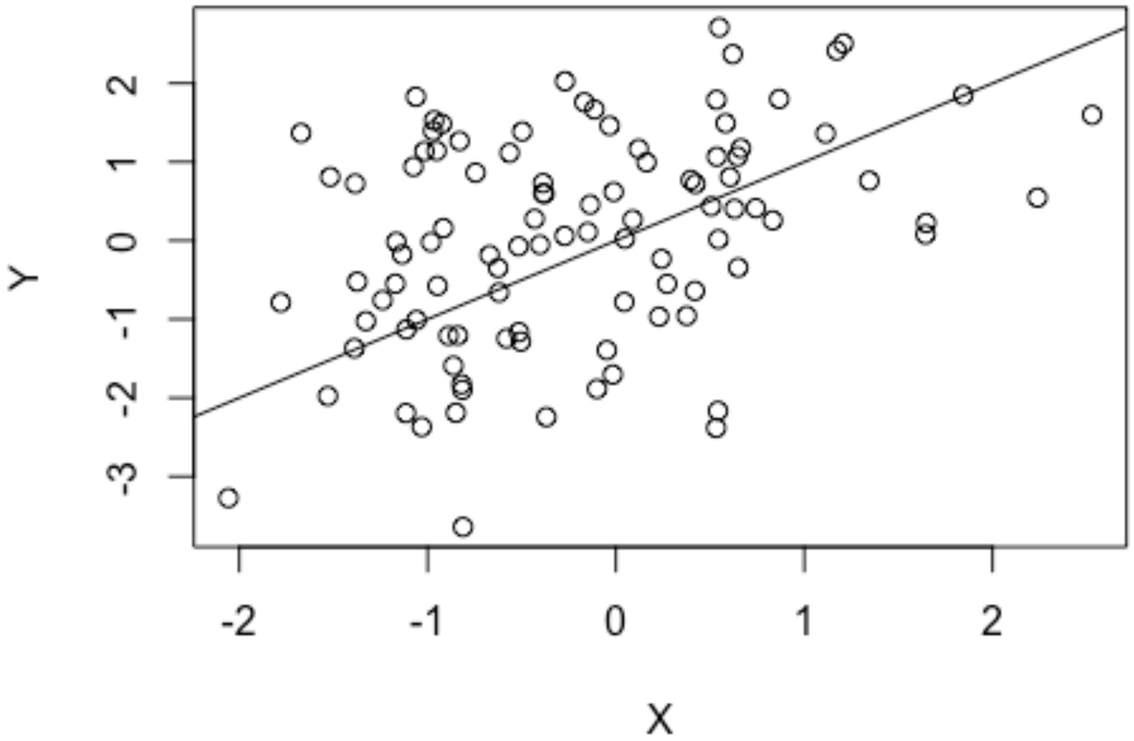
$$\frac{1}{n}\sum_{i=1}^{n}(y_i - \hat{y}_i)^2$$

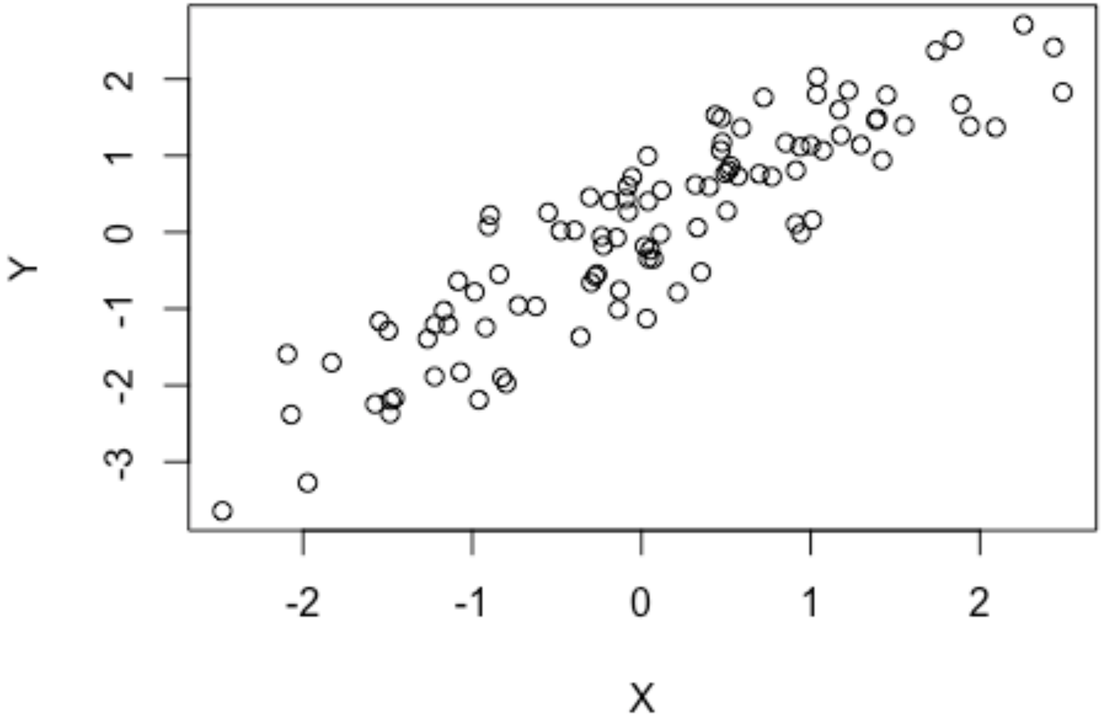
R-square
“Proportion of variance explained”

$$1 - \frac{\sum_{i=1}^{n} (y_i - \hat{y}_i)^2}{\sum_{i=1}^{n} (y_i - \bar{y})^2}$$

Residual sum of squares




Y
X
-3
-2
-1
0
1
2
-2
-1
0
1
2


Y
X
-3
-2
-1
0
1
2
-2
-1
0
1
2

Adjusted R-square

$$1 - \left[\frac{\sum_{i=1}^{n}(y_i - \hat{y}_i)^2}{\sum_{i=1}^{n}(y_i - \bar{y})^2} \times \frac{(n-1)}{(n-k-1)}\right]$$

What is a “good” R square value?

It depends!