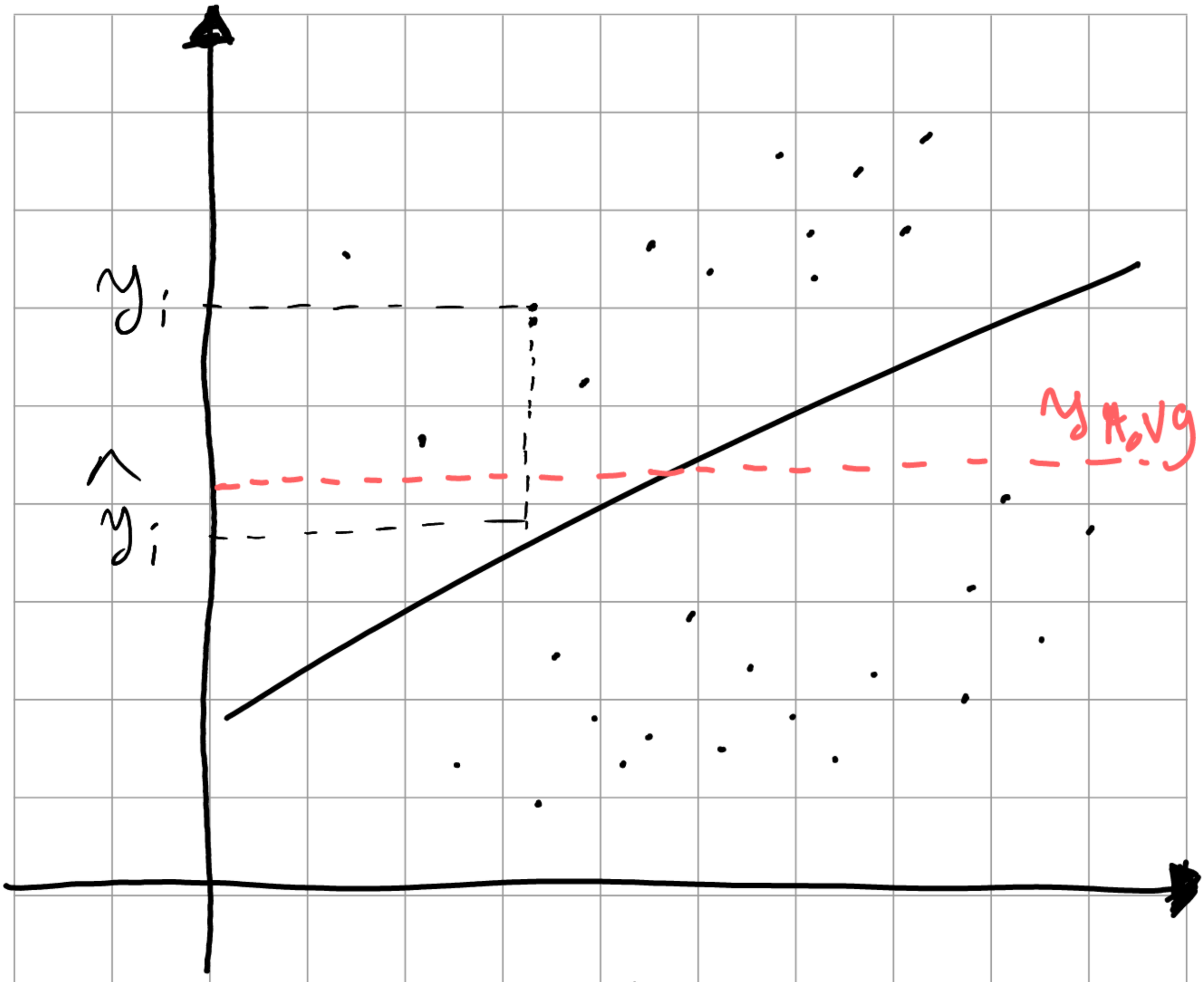

$$SS_{res} = Sum(y_i - \hat{y}_i)^2$$

$$SS_{tot} = Sum(y_i - y_{avg})^2$$

$$R^2 = 1 - \frac{SS_{res}}{SS_{tot}}$$

R^2 ~ 1.0 Perfect fit

0.9 very good

< 0.7 Not great

< 0.4 terrible

< 0 Model makes no sense for the Data

Problem:

$\hat{y} = b_0 + b_1 X_1 + b_2 X_2 < \boxed{b_3 X_3}$

SS_{tot} doesn't change

SS_{res} will decrease or stay the same.

$$\Rightarrow Adj\ R^2 = 1 - (1 - R^2) \times \frac{n-1}{n-k-1}$$

n = sample size, k = number of independent variables