

# Model Selection Criteria

## Four ways to estimate test performance using an approximation

Full model has  $p$  predictors

RSS is the residual sum of squares for model with  $d$  predictors

$\hat{\sigma}^2 = \text{RSS}_p / (n - p - 1)$  is an estimate of the error variance for full model

### 4. Adjusted R-squared value

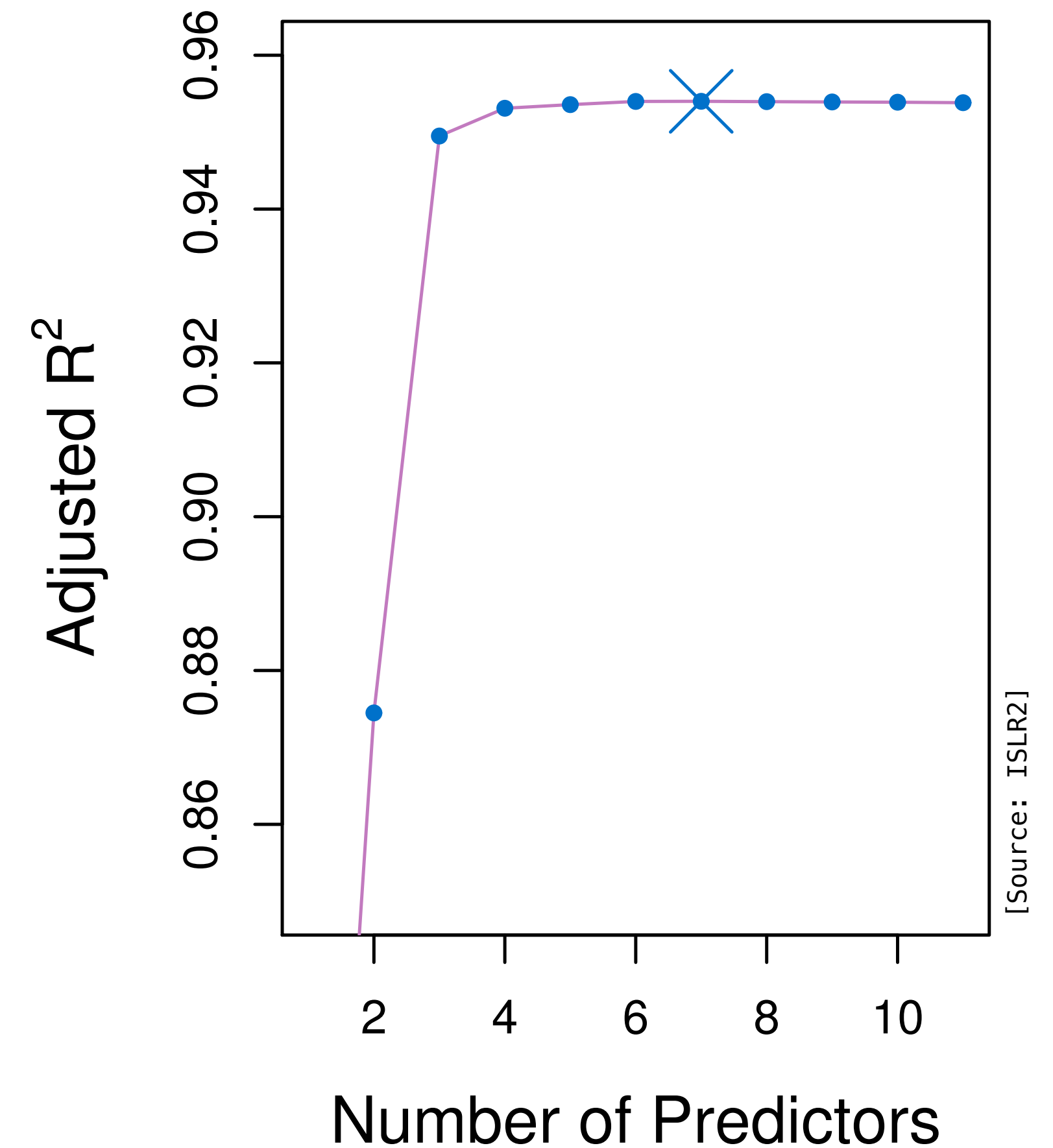
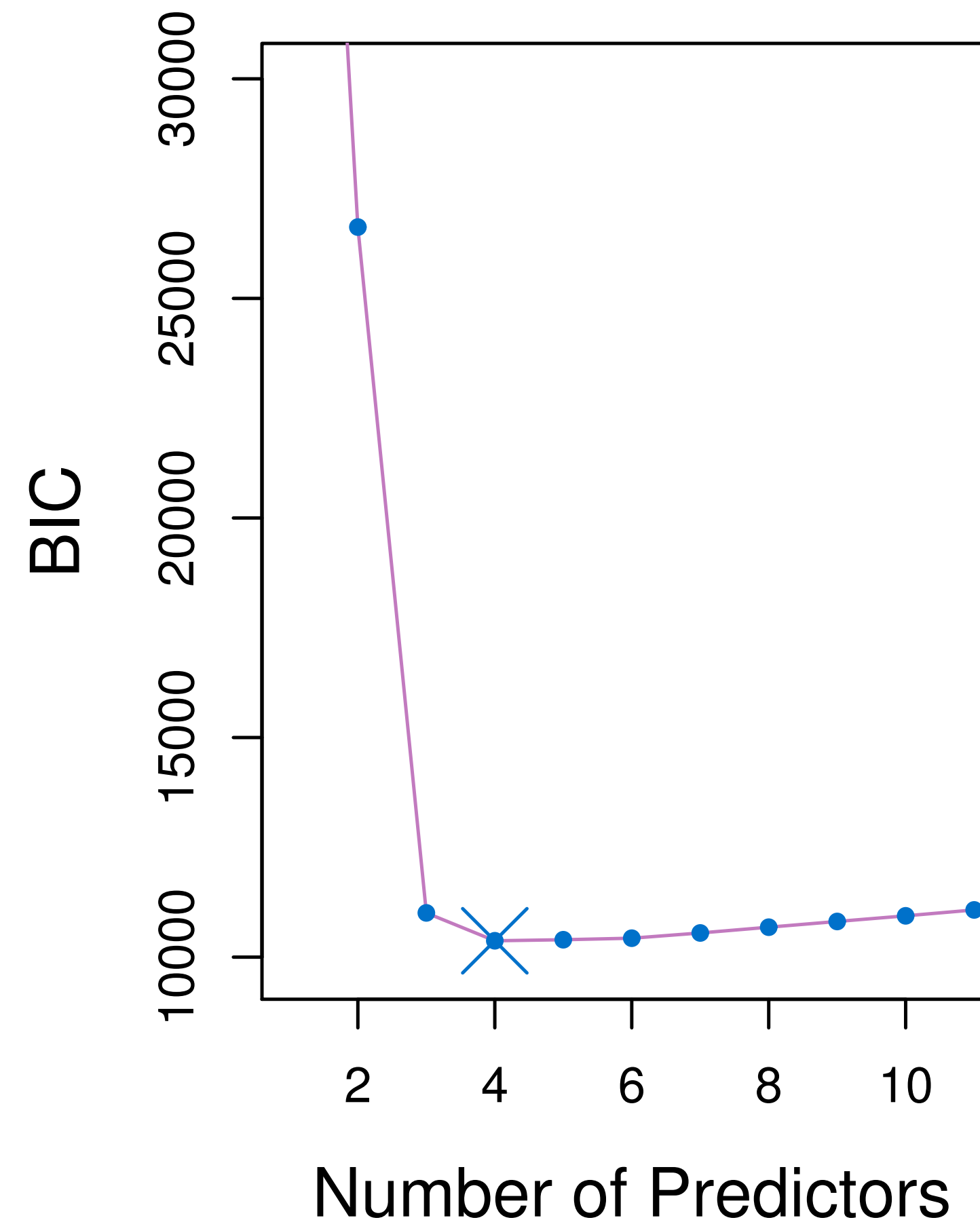
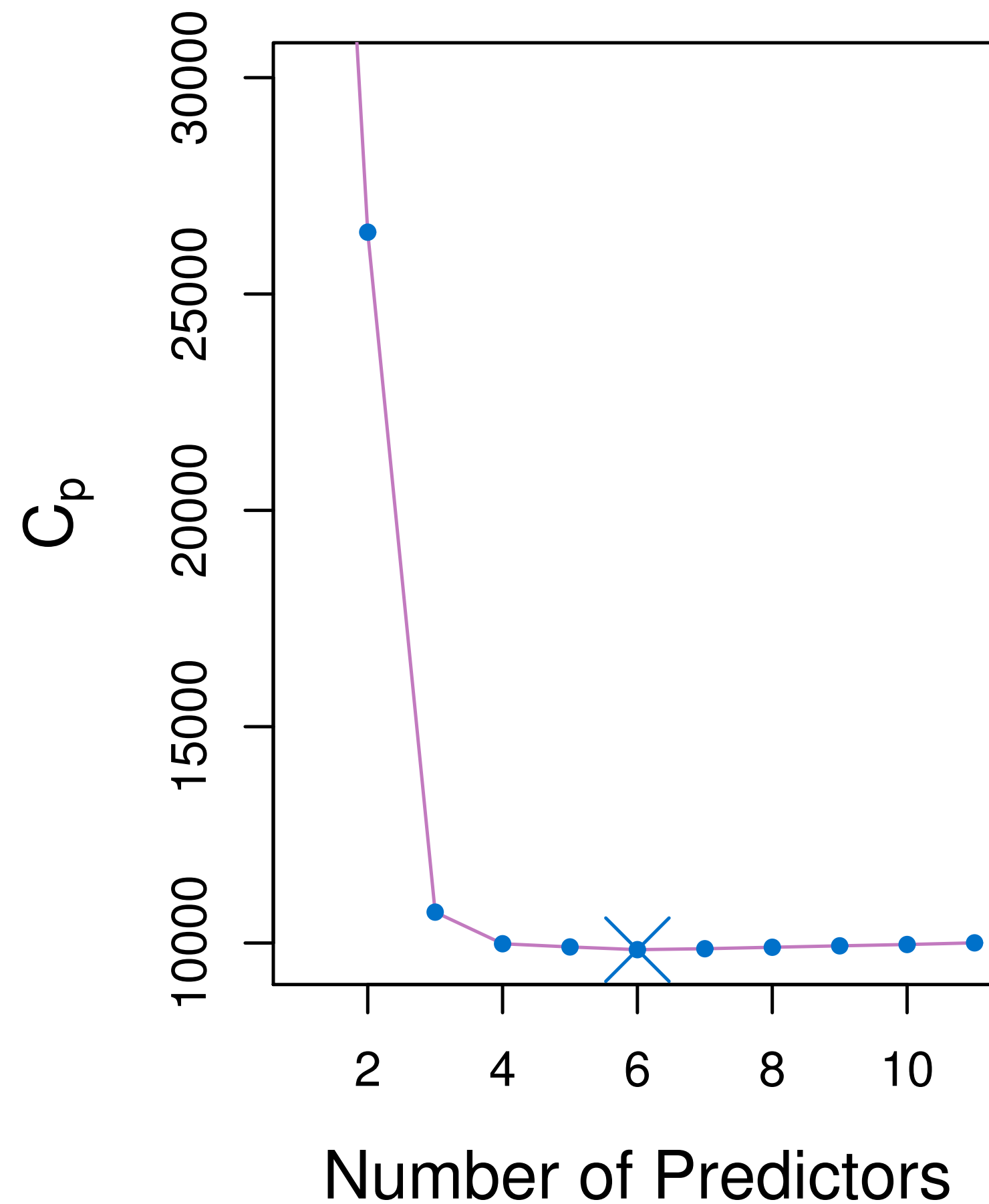
Adjust the regular  $R^2$  by taking into account number of predictors

$$\text{Adjusted-}R^2 = 1 - \frac{\text{RSS}/(n - d - 1)}{\text{TSS}/(n - 1)}$$

$\Rightarrow$  choose the model which has **maximum** Adjusted- $R^2$

# Model Selection Criteria

Four ways to estimate test performance using an approximation



[Source: ISLR2]