

$$AR2: y_t = \alpha_0 + \alpha_1 y_{t-1} + \alpha_2 y_{t-2} + u_t$$

$$t = 1, \dots, 288 \quad \left(\overset{1952.1}{1954.1} - \underset{288}{2023.4} \right)$$

Predict 1990.1 - 2019.4, 4 quarters ahead
 153 272

① ESTIMATE 1954.1 - 1989.4
 9 - 152

Predict 1990.1 - 1990.4 DYNAMIC (Actual y_{151} & y_{152})
 153 156 151
 LET $\hat{p}_{156} = \hat{y}_{156}$

② ESTIMATE 1954.1 - 1990.1
 9 - 153

Predict 1990.2 - 1991.1 DYNAMIC (Actual y_{152} & y_{153})
 154 157
 LET $\hat{p}_{157} = \hat{y}_{157}$

⋮

①①⑦ ESTIMATE 1954.1 - 2018.4
 9 - 268

Predict 2019.1 - 2019.4 DYNAMIC (Actual y_{267} & y_{268})
 269 272

$$\text{LET } \hat{p}_{272} = \hat{y}_{272}$$

$$RMSE = \sqrt{\frac{1}{117} \sum_{t=156}^{272} (y_t - \hat{p}_t)^2}$$