

ARMA(2,4) with mean switching

Measurement:

$$Y_t = [1.0 \ \tau_1 \ \tau_2 \ \tau_3 \ \tau_4] \begin{bmatrix} \beta_{1,t} \\ \beta_{2,t} \\ \beta_{3,t} \\ \beta_{4,t} \\ \beta_{5,t} \end{bmatrix} + \mu_{s,t}$$

Transition:

$$\begin{bmatrix} \beta_{1,t} \\ \beta_{2,t} \\ \beta_{3,t} \\ \beta_{4,t} \\ \beta_{5,t} \end{bmatrix} = \begin{bmatrix} \phi_1 & \phi_2 & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 \end{bmatrix} \begin{bmatrix} \beta_{1,t-1} \\ \beta_{2,t-1} \\ \beta_{3,t-1} \\ \beta_{4,t-1} \\ \beta_{5,t-1} \end{bmatrix} + \begin{bmatrix} e_t \\ 0 \\ 0 \\ 0 \\ 0 \end{bmatrix}$$