

# SUR

6 กันยายน 2561 8:11

$$\begin{bmatrix} y_1 \\ y_2 \\ \vdots \\ y_m \end{bmatrix} = \begin{bmatrix} x_1 & 0 \\ 0 & x_2 \\ & \vdots \\ & & x_m \end{bmatrix}$$
  

$$\begin{bmatrix} y_{11} \\ y_{12} \\ \vdots \\ y_{1t} \\ y_{21} \\ y_{22} \\ \vdots \\ y_{2t} \end{bmatrix} = \begin{bmatrix} 1 & x_{11} & x_{21} & 0 & 0 \\ 1 & x_{12} & x_{22} & 0 & 0 \\ \vdots & \vdots & \vdots & \vdots & \vdots \\ 1 & x_{1t} & x_{2t} & 0 & 0 \\ 0 & 0 & 0 & 1 & x_{211} \\ 0 & 0 & 0 & 1 & x_{212} \\ \vdots & \vdots & \vdots & \vdots & \vdots \\ 0 & 0 & 0 & 1 & x_{21t} \end{bmatrix}$$

## 2 Models

$$E[uu'] = \Sigma$$

$$\begin{bmatrix} y_1 \\ y_2 \end{bmatrix} = \begin{bmatrix} x_1 \\ x_2 \end{bmatrix} \begin{bmatrix} \beta_{10} \\ \beta_{11} \\ \beta_{12} \end{bmatrix} + \begin{bmatrix} u_1 \\ u_2 \end{bmatrix}$$
  

$$\begin{bmatrix} y_{11} \\ y_{12} \\ \vdots \\ y_{1t} \\ y_{21} \\ y_{22} \\ \vdots \\ y_{2t} \end{bmatrix} = \begin{bmatrix} 1 & x_{11} & x_{21} & 0 & 0 & 0 \\ 1 & x_{12} & x_{22} & 0 & 0 & 0 \\ \vdots & \vdots & \vdots & \vdots & \vdots & \vdots \\ 1 & x_{1t} & x_{2t} & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & x_{21} & x_{31} \\ 0 & 0 & 0 & 1 & x_{22} & x_{32} \\ \vdots & \vdots & \vdots & \vdots & \vdots & \vdots \\ 0 & 0 & 0 & 1 & x_{2t} & x_{3t} \end{bmatrix} \begin{bmatrix} \beta_{10} \\ \beta_{11} \\ \beta_{12} \\ \beta_{20} \\ \beta_{22} \\ \beta_{23} \end{bmatrix} + \begin{bmatrix} u_{11} \\ u_{12} \\ \vdots \\ u_{1t} \\ u_{21} \\ u_{22} \\ \vdots \\ u_{2t} \end{bmatrix}$$
  

$$\Sigma = \begin{bmatrix} \sigma_1^2 & \rho \sigma_1 \sigma_2 & \dots & \dots \\ \rho \sigma_1 \sigma_2 & \sigma_2^2 & \dots & \dots \\ \vdots & \vdots & \ddots & \vdots \\ \vdots & \vdots & \vdots & \ddots \end{bmatrix}$$

