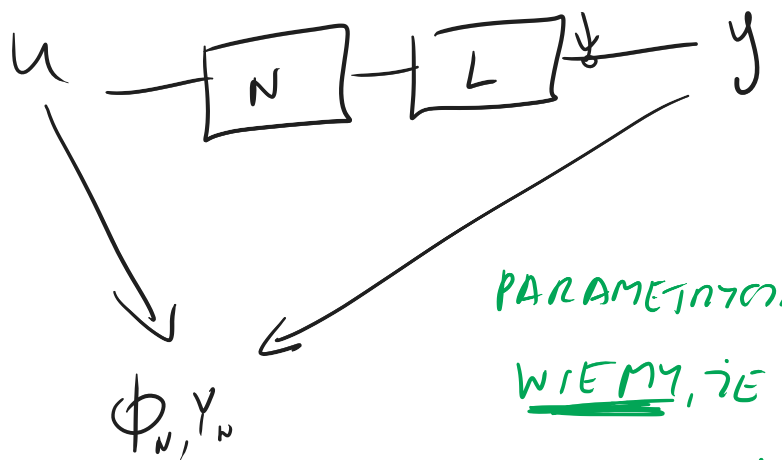

PARAMETRYCZNA POSTAĆ $\mu()$

WIEMY, ŻE

$$\mu(u) = \underbrace{c_1\varphi_1(u) + c_2\varphi_2(u) + \dots + c_m\varphi_m(u)}$$

$$y_k = \sum_{i=0}^{s-1} \gamma_i \mu(u_{k-i}) = \gamma_0\left[c_1\varphi_1(u_k) + c_2\varphi_2(u_k) + \dots + c_m\varphi_m(u_k)\right] +$$

$$+ \gamma_1\left[c_1\varphi_1(u_{k-1}) + c_2\varphi_2(u_{k-1}) + \dots + c_m\varphi_m(u_{k-1})\right] +$$

$$\vdots$$

$$+ \gamma_{s-1}\left[c_1\varphi_1(u_{k-(s-1)}) + \dots + c_m\varphi_m(u_{k-(s-1)})\right] + z_k =$$

$$= \overbrace{\begin{bmatrix} \gamma_0 c_1 \\ \vdots \\ \gamma_0 c_m \\ \gamma_1 c_1 \\ \vdots \\ \gamma_1 c_m \\ \vdots \\ \gamma_{s-1} c_1 \\ \vdots \\ \gamma_{s-1} c_m \end{bmatrix}}^{\theta}{}^T \overbrace{\begin{bmatrix} \varphi_1(u_k) \\ \vdots \\ \varphi_m(u_k) \\ \varphi_1(u_{k-1}) \\ \vdots \\ \varphi_m(u_{k-1}) \\ \vdots \\ \varphi_1(u_{k-(s-1)}) \\ \vdots \\ \varphi_m(u_{k-(s-1)}) \end{bmatrix}}^{\phi_k} + z_k = \theta^T \cdot \phi_k + z_k$$

$$k = 1, 2, \dots, N$$

$$Y_N = \begin{bmatrix} y_1 \\ y_2 \\ \vdots \\ y_N \end{bmatrix} \qquad \Phi_N = \begin{bmatrix} \leftarrow \phi_1^T \rightarrow \\ \leftarrow \phi_2^T \rightarrow \\ \vdots \\ \leftarrow \phi_N^T \rightarrow \end{bmatrix} \qquad Z_N = \begin{bmatrix} z_1 \\ \vdots \\ z_N \end{bmatrix}$$

$$\hat{\theta} = \left(\Phi_N^T \Phi_N\right)^{-1} \Phi_N^T Y_N \xrightarrow{N \to \infty} \theta$$