

Fuente: Clase 2 de Econometría 2 2021

Markov switching regimes

$$L = \sum_{t=1}^T \ln[p_{11}f_1(y_t|x_t, \theta_1) + (1 - p_{11})f_2(y_t|z_t, \theta_2)] \quad (1)$$

$$+ [(1 - p_{22})f_1(y_t|x_t, \theta_1) + p_{22}f_2(y_t|x_t, \theta_2)] \quad (2)$$

- Problem: estimate P , θ_1 , θ_2 observing only y and x
- We do not know s_{t-1} , thus approach of mixtures is not feasible
- EM algorithm
 - Starting algorithm
 - Forecast and smoothed inferences for regimes
 - Forecast for observed variables
 - MLE estimation
- Endogenous probabilities (Lee and Nelson)