UNIVERSITY OF TEXAS, MCCOMBS SCHOOL OF BUSINESS

# Hierarchical modeling of export share panel data

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# 1 The model

$$y_{ijt} = \alpha_i + \sum_{c=1}^{C} \beta_{ij}^{c} x_{ijt}^{c} + \epsilon_{ijt} \tag{1.1}$$

$$\epsilon_{ijt} \sim N(0, \sigma^2) \tag{1.2}$$

where $y_{ijt}$ is the response (change in export share) and $\{x_{ijt}^{c}\}_{c=1}^{C}$ is the set of $C$ covariates. We need to estimate the following parameters: $\alpha_i, \beta_{ij}^{c}$.

To form a hierarchical model, we put priors and hyperpriors on the parameters we need to estimate.