ECON6300/7320/8300
Advanced Microeconometrics
Finite Mixture Models

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Practical 11

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Introduction

- This class will review:
  - Fitting gaussian finite mixture models
  - Estimating latent class probabilities
  - Fitting densities using finite mixture models
  - Adding covariates
  - Marginal effects
  - Choosing the number of latent classes
- We begin with a demonstration using medical expenditure data from Vietnam.
- We move on to a practical in which we model latent classes in the log number of doctor visits.

Practical (1)

- We have data on the number of doctor visits
- A cross section from the U.S. Medical Expenditure Panel Survey for 2003, for those on Medicare and aged at least 65.

- The dependent variable is log doctor visits (ldocvis)
- The covariates are age (age), age squared (age2), years of education (educyr), activity limitation indicator (actlim), number of chronic conditions (totchr), private insurance indicator (private), and Medicaid indicator (medicaid)

Practical (2)

1. Load, describe and summarise the data.
2. Estimate the density of log doctor visits
3. Fit a finite mixture model, using BIC to determine the number of classes
4. Use the fitted model to interpret your latent classes
5. Estimate the latent class probabilities
6. Use your FMM to fit and plot the density of log doctor visits
7. Now repeat your analysis using the covariates on the previous slide, and compute the elasticity of log doctor visits with respect to number of chronic conditions
8. Use FMM to compute fitted values for log doctor visits, and plot a histogram of the fitted values for each class.