POLS 6481 - Methods 2 - Lab 8

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April 5, 2021

Overview

Binrary Choice Models

- Probit is a *Maximum Likelihood Estimation* (MLE) technique
- It is a *Generalized Linear Model* (GLM)
- It is a *Binary Choice Model*
- Three basic binary choice models: Logit, Probit, Linear Probability Model
- The basic model is the same as *logit*, but...

A guide to Modern Econometric, 3rd edition, Marno Verbeek, 2008, p. 200-204.

The link function is different...

Logit link function
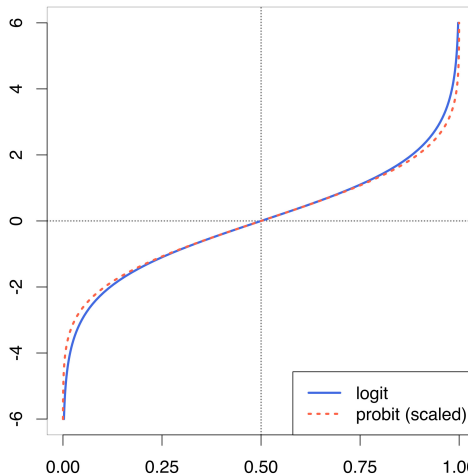
$\eta = log(\frac{p}{1-p})$

Probit link function

$\eta = \Phi^{-1}(p)$ where Φ^{-1} is the inverse normal CDF

Linear Probability Model

Uses a uniform distribution from 0 to 1

Logit vs Probit - simple case

Things to watch out for

Yellow highlights in worksheet!

Learning points

- *predict* function
- what if it doesn't work?
- calculate predictions by calling coefficients
- **not used** save coefficients to a new data frame

General

I will post answers and you can submit any questions you have to me

Extra Credit Question: Loess

Basic information on LOESS and LOWESS (closely related techniques)

- Common presentation method; not commonly understood
- locally estimated scatterplot smoothing (LOESS)
- locally weighted scatterplot smoothing (LOWESS)
- fit the data better than a linear regression
- Regression weighted around neighborhood point estimates
- Picks k points
- Regressions are plotted to the nearest of the k points
- "How To Be Smooth: Automated Smoothing in Political Science," Luke Keele, 2006 (on ResearchGate)
- "Beyond Linearity by Default: Generalized Additive Models," Nathaniel Beck and Simon Jackman, 1998 (in UH Library Search)

The End