

NLOGIT and LIMDEP

NLOGIT has become the standard package for estimation and simulation of multinomial discrete choice models. Version 3.0 is a full information maximum likelihood estimator for, among other models, up to four level nested logit models. Many other formulations are included in NLOGIT, including random parameters (mixed logit) models, multinomial probit, many forms of the nested logit model, and several new formulations for panel data. NLOGIT is the only large package for discrete choice analysis that contains the full set of features of an integrated econometrics program (LIMDEP).

NLOGIT 3.0 includes the following features:

Econometrics Studio - NLOGIT and LIMDEP

NLOGIT is a superset of LIMDEP Version 8.0. The full program consists of all of LIMDEP 8.0 plus the full set of additional features in NLOGIT, including the additional data management features, estimators for many types of discrete choice models, and the program simulator.

Documentation

The documentation for NLOGIT consists of the full set of manuals for LIMDEP plus a separate 200 page reference guide specifically for NLOGIT. This reference guide documents all features that are specific to the NLOGIT package.

Data Analysis

NLOGIT will typically be used to analyze individual, cross section data on consumer choices and decisions from multiple alternatives. But, the program is equally equipped for market shares or frequency data, data on rankings of alternatives, and, for several of the estimators, panel data from repeated observation of choice situations. There are several data handling procedures for NLOGIT in addition to all those available in LIMDEP.

Model Specification

NLOGIT's estimation programs are accessed as LIMDEP model commands. Since discrete choice models are often more complicated to specify than other single equation models in LIMDEP, the command setup includes many specifications that are specific to NLOGIT.

Model Estimation

NLOGIT supports a greater range of models for discrete choice than any other package. These include the basic multinomial logit model, nested logit models up to four levels, the multinomial probit model and the state of the art estimator for the mixed (random parameters) logit model. In all cases, there are a variety of different forms of the model available.

There are seven specific broad classes of models supported by NLOGIT.

NLOGIT Discrete Choice Models

- Multinomial Logit
- Heteroscedastic Extreme Value
- Nested Logit
- Covariance Heterogeneity
- Multinomial Probit
- Random Parameters (Mixed) Logit
- Latent Class

These are in addition to the discrete choice estimators provided by LIMDEP

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LIMDEP Discrete Choice Models

- Binary logit; basic, fixed effects, random effects, random parameters, latent class, heteroscedastic
- Binary choice models, probit, logit, Gompertz,
- Bivariate and multivariate choice (up to 20 equations)
- Ordered choice models

Inference Tools for Hypothesis Testing

The full set of post estimation and analysis tools in LIMDEP is accessed by NLOGIT. This includes the Wald, likelihood ratio and Lagrange multiplier tests as well as all the matrix algebra and scientific calculator tools. NLOGIT also provides tools specific for discrete choice analysis, including a built-in procedure for testing the IIA assumption of the multinomial logit model.



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Simulation

Any model estimated by NLOGIT can be subjected to 'what if' analyses using the model simulation package. The base case model produces a set of fitted probabilities for the sample data which aggregate to a prediction of the sample shares for the alternatives in the choice set. The simulator is then used, with the estimation data set or any other compatible data set, to recompute these shares under scenarios that you specify, such as a change in the price of a particular alternative or a change in household incomes.