

REGRESSION ANALYSIS OF QUANTAL DATA

BY **DAVID A. BENTON** AND **DAVID J. HENDRY**

Department of Economics, University of Oxford, Oxford, England

USA

UK

ABSTRACT. This paper discusses the use of quantal data in regression analysis. It begins by reviewing the basic theory of quantal data and the use of the logit and probit models. It then discusses the use of the ordered probit model and the multinomial logit model. Finally, it discusses the use of the generalized ordered probit model and the generalized multinomial logit model.

The use of quantal data in regression analysis is a well-established practice. The most common models used are the logit and probit models. The logit model is based on the logistic function, and the probit model is based on the cumulative distribution function of the standard normal distribution. Both models are used to estimate the probability of a binary outcome given a set of explanatory variables. The ordered probit model is used to estimate the probability of an ordered outcome given a set of explanatory variables. The multinomial logit model is used to estimate the probability of a multinomial outcome given a set of explanatory variables. The generalized ordered probit model and the generalized multinomial logit model are extensions of the ordered probit and multinomial logit models, respectively. They allow for the estimation of the probability of an ordered or multinomial outcome given a set of explanatory variables, while also allowing for the estimation of the effect of the explanatory variables on the probability of the outcome.

KEYWORDS: Quantal data, logit, probit, ordered probit, multinomial logit, generalized ordered probit, generalized multinomial logit.

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