

## The Inverse Product Differentiation Logit Model

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### *Abstract:*

This paper proposes an empirical model of inverse demand for differentiated products: the Inverse Product Differentiation Logit (IPDL) model. The IPDL model generalizes the commonly used nested logit model to allow richer substitution patterns, including complementarity. Nevertheless, the IPDL model can be estimated by two-stage least squares using aggregate data. We apply the IPDL model to data on ready-to-eat cereals in Chicago in 1991-1992, and find that complementarity is pervasive in this market. We then show that the IPDL model belongs to a wider class of inverse demand models in which products can be complements, and which is sufficiently large to encompass a large class of discrete choice demand models. We establish invertibility for this wider class, thus extending previous results on demand inversion.