

# Identification of Dynamic Panel Logit Models with Fixed Effects

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## Abstract

We show that the identification problem for a class of dynamic panel logit models with fixed effects has a connection to the *truncated moment problem* in mathematics. We use this connection to show that the sharp identified set of the structural parameters is characterized by a set of moment equality and inequality conditions. This result provides sharp bounds in models where moment equality conditions do not exist or do not point identify the parameters. We also show that the sharp identified set of the non-parametric latent distribution of the fixed effects is characterized by a vector of its generalized moments, and that the number of moments grows linearly in  $T$ . This final result lets us point identify, or sharply bound, specific classes of functionals, without solving an optimization problem with respect to the latent distribution. We illustrate our identification result with several examples, and an empirical application on modeling children's respiratory conditions.

*Keywords:* Stieltjes Truncated Moment Problem, Dynamic Panel Logit Model, Fixed Effects, Moment Inequalities, Functionals of Latent Distribution

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