

# Estimating market power in homogenous product markets using a composed error model: application to the California electricity market

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**Luis Orea and Jevgenijs Steinbuks**

## Abstract

This study contributes to the literature on estimating market power in homogenous product markets. We estimate a composed error model, where the stochastic part of the firm's pricing equation is formed by two random variables: the traditional error term, capturing random shocks, and a random conduct term, which measures the degree of market power. Treating firms' conduct as a random parameter helps solving the issue that the conduct parameter can vary between firms and within firms over time. The empirical results from the California wholesale electricity market suggest that realization of market power varies over both time and firms, and reject the assumption of a common conduct parameter for all firms. Notwithstanding these differences, the estimated firm-level values of the conduct parameter are closer to Cournot than to static collusion across all specifications. For some firms, the potential for realization of the market power unilaterally is associated with lower values of the conduct parameter.

## Keywords

market power, random conduct parameter, composed error model, asymmetric distributions, California electricity market

## JEL Classification

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Contact

jsteinbu@purdue.edu

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