Estimating Treatment Effects from Contaminated Multi-Period Education Experiments: The Dynamic Impacts of Class Size Reductions*

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July 2009

Abstract

This paper introduces an empirical strategy to estimate dynamic treatment effects in randomized trials that provide treatment in multiple stages and in which various noncompliance problems arise such as attrition and selective transitions between treatment and control groups. Our approach is applied to the highly influential four year randomized class size study, Project STAR. We find benefits from attending small class in all cognitive subject areas in kindergarten and the first grade. We do not find any statistically significant dynamic benefits from continuous treatment versus never attending small classes following grade one. Finally, statistical tests support accounting for both selective attrition and noncompliance with treatment assignment.

Keywords: *Dynamic treatment effects, contaminated experiments, class size, education production, attrition, non-compliance*

JEL Code: *I21 and C31*

* We wish to thank seminar participants at Harvard University, McGill University, NBER Economics of Education Fall 2003 meetings, New York University, Carnegie-Mellon University, Penn State University, Queen's University, Simon Fraser University, University of Calgary, University of California - Riverside, University of Florida, Université Laval, Economics and Education Development Conference at the Federal Reserve Bank of Cleveland, ZEW 3rd Conference on Policy Evaluation, 2008 SOLE meetings, 2006 Target Conference, 2005 CEA meetings and the 2004 NASM of the Econometric Society for comments and suggestions. We are grateful to Petra Todd for helpful discussions and encouragement at the initial stages of this project. Two anonymous referees and a co-editor made suggestions that led to a substantial improvement in the presentation of the paper. We would also like to thank Alan Krueger for generously providing a subset of the data used in the study. Lehrer wishes to thank SSHRC for research support.