Seminario de Microeconomía Aplicada - On Conditional and Unconditional Quantile DiD: Identification, Weighting, and Estimation

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Abstract: We study quantile difference-indifferences (DiD) in panel settings and clarify the relationship between conditional and unconditional quantile DiD estimands. We formalize Conditional Quantile DiD (CQDD) and Unconditional Quantile DiD (UCQDD), show that they coincide without covariates but generally diverge with covariates, and provide intuition for why empirical "conditional" and "unconditional" procedures can differ even in simple designs. We then analyze two-way fixed-effects (TWFE) implementations based on quantile regression and recentered influence functions. While TWFE identifies the intended quantile DiD contrast in the canonical 2 × 2 design, it delivers density-weighted mixtures with multiple post-treatment periods and, under staggered adoption, combines cohort-time effects with potentially negative weights, undermining causal interpretation. Motivated by these results, we propose clean quantile DiD estimators for staggered adoption based on valid cohort-time comparisons and transparent convex aggregation. Simulations show that the proposed estimators eliminate the large distortions that can arise from TWFE quantile regressions under heterogeneous effects and staggered timing.

About the exhibitor: Camilo Antonio Arias, is a professor at the University of La Sabana and a graduate of the PhD program in Economics at the University of the Andes, studies how to measure distributional effects in difference-in-differences designs, focusing on quantile effects. In particular, he shows that standard TWFE-type implementations can generate non-causal objects under staggered adoption, and proposes an alternative based on cohort-time comparisons.

Exposure time: 1 hora

Fuente: https://www.banrep.gov.co/en/seminario-microeconomia-aplicada-conditional-and-unconditional-quantile-did-identification