

Abstract: This research provides a new approach for identifying and estimating the Average Treatment Effect on the Treated under a linear factor model that allows for multiple time-varying unobservables. Unlike the majority of the literature on treatment effects in linear factor models, our approach does not require the number of pre-treatment periods to go to infinity to obtain a valid estimator. Our identification approach employs a certain nonlinear transformations of the time invariant observed covariates that are sufficiently correlated with the unobserved variables. This relevance condition can be checked with the available data on pre-treatment periods by validating the correlation of the transformed covariates and the pre-treatment outcomes. Based on our identification approach, we provide an asymptotically unbiased estimator of the effect of participating in the treatment when the number of control units is large. (This is a joint study with Takuya Ishihara, Tohoku University.)