

# Estimation of endogenous treatment effect estimation with high dimensional instrumental variables and double selection

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**Abstract:** This paper proposes a method for endogenous treatment effect estimation using a large number of instruments and double selection (Belloni et al., 2016). In the data-rich environment, it is important to select the control variables in the structural equation. At the same time, the potential endogeneity problem for the treatment variable of interests would not be alleviated even when we put many controls. To address this issue, our method integrates the IV estimation as well as the double selection approach. The asymptotic theory of the IV estimator with double selection is developed, namely, the limiting distribution and the model selection consistency. In an empirical study, we investigate the treatment effect of teacher's attentiveness and student's achievement.