

# A novel approach for estimation of seemingly unrelated linear regressions with high order autoregressive disturbances

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## Abstract

The problem of estimating a system of linear regression equations in which the disturbances are contemporaneously correlated across equations has been investigated in the past years. One of the major problems encountered in the estimation of such system of linear regression equations is the possible existence of serial correlation of the disturbances. [3] modified the original "seemingly unrelated linear regressions" estimation technique known as Zellner's two stage Aitken estimator for the first order autoregressive disturbances in each equation. Also, several alternative estimators given by [2] are compared for small samples.

In this paper, seemingly unrelated linear regressions with high order autoregressive disturbances are considered. A novel approach which includes a polynomial tapering function given by [1] is proposed for high order autoregressive disturbances in order to obtain more efficient parameter estimates. Monte Carlo simulation study is applied to compare this approach with the other estimators for small-sample efficiency.

## Keywords

Linear regression, Contemporaneously correlation, Autoregressive disturbances, Tapering procedure.

## References

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