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Dynamic Quantile Panel Data Models with Interactive Effects

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Non-Technical Summary

- We propose a simple two-step procedure for estimating the dynamic quantile panel data model with unobserved interactive effects.
- To account for the endogeneity induced by correlation between factors and lagged dependent variable/regressors, we first estimate factors consistently via an iterative principal component analysis.
- In the second step, we run a quantile regression for the augmented model with estimated factors and estimate the slope parameters.
- In particular, we adopt a smoothed quantile regression analysis where the quantile loss function is smoothed to have well-defined derivatives.
- The proposed two-step estimator is consistent and asymptotically normally distributed, but subject to asymptotic bias due to the incidental parameters.
- We then apply the split-panel jackknife approach to correct the bias. Monte Carlo simulations confirm that our proposed estimator has good finite sample performance.
- Finally, we demonstrate the usefulness of our proposed approach with an application to the analysis of bilateral trade for 380 country pairs over 59 years.

You can read the full paper here.