

Robust standard errors for panel regressions with cross-sectional dependence

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Abstract. I present a new Stata program, `xtscc`, that estimates pooled ordinary least-squares/weighted least-squares regression and fixed-effects (within) regression models with Driscoll and Kraay (*Review of Economics and Statistics* 80: 549–560) standard errors. By running Monte Carlo simulations, I compare the finite-sample properties of the cross-sectional dependence-consistent Driscoll–Kraay estimator with the properties of other, more commonly used covariance matrix estimators that do not account for cross-sectional dependence. The results indicate that Driscoll–Kraay standard errors are well calibrated when cross-sectional dependence is present. However, erroneously ignoring cross-sectional correlation in the estimation of panel models can lead to severely biased statistical results. I illustrate the `xtscc` program by considering an application from empirical finance. Thereby, I also propose a Hausman-type test for fixed effects that is robust to general forms of cross-sectional and temporal dependence.

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