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STATISTICAL INFERENCE IN A RANDOM COEFFICIENT PANEL MODEL

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Abstract. This paper studies the asymptotics of the Weighted Least Squares (WLS) estimator of the autoregressive root in a panel Random Coefficient Autoregression (RCA). We show that, in an RCA context, there is no "unit root problem": the WLS estimator is always asymptotically normal, irrespective of the average value of the autoregressive root, of whether the autoregressive coefficient is random or not, and of the presence and degree of cross dependence. Our simulations indicate that the estimator has good properties, and that confidence intervals have the correct coverage even for sample sizes as small as $(N, T) = (10, 25)$. We illustrate our findings through two applications to macroeconomic and financial variables.

Keywords: Random Coefficient Autoregression, Panel Data, WLS estimator, common factors

JEL Codes: C13, C23.

Key words and phrases. Random Coefficient Autoregression, Panel Data, Weighted Least Squares, Cross Dependence.
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