Inference in models with adaptive learning, with an application to the new Keynesian Phillips curve

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Abstract

Replacing rational expectations by bounded rationality of agents, in the form of adaptive learning algorithms complicates the dynamics of economic models. Identification of the structural parameters is improved under learning relative to rational expectations, but it deteriorates when learning converges to rational expectations. Learning also induces persistent dynamics, and this makes the distribution of estimators and test statistics non-standard. We show that valid inference can be conducted using the Anderson- Rubin statistic with appropriate choice of instruments. Application of this method to the new Keynesian Phillips curve with US data provides evidence against constant gain least squares learning.

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