The Intertemporal Keynesian Cross
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Abstract:

This paper develops a novel approach to analyzing the transmission of shocks and policies in many existing macroeconomic models with nominal rigidities. Our approach is centered around a network representation of agents’ spending patterns: nodes are goods markets at different times, and flows between nodes are agents’ marginal propensities to spend income earned in one node on another one. Since, in general equilibrium, one agent’s spending is another agent’s income, equilibrium demand in each node is described by a recursive equation with a special structure, which we call the intertemporal Keynesian cross (IKC). Each solution to the IKC corresponds to an equilibrium of the model, and the direction of indeterminacy is given by the network’s eigenvector centrality measure. We use results from Markov chain potential theory to tightly characterize all solutions. In particular, we derive (a) a generalized Taylor principle to ensure bounded equilibrium determinacy; (b) how general equilibrium responses can be decomposed into their partial equilibrium origins; (c) how most shocks do not affect the net present value of aggregate spending in partial equilibrium and nevertheless do so in general equilibrium. We demonstrate the power of our approach in the context of a quantitative Bewley-Huggett-Aiyagari economy for fiscal and monetary policy.