Università Commerciale Luigi Bocconi

Department of Decision Sciences **Department of Economics**

Economic Theory, Decision Theory and Experimental Economics Seminar

Bounded rationality and heterogeneous expectations in macroeconomics

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Abstract

We discuss the role of bounded rationality and heterogeneous expectations in the New Keynesian macro model. We estimate a 2-type model with forward looking fundamentalists versus backward looking naïve expectations on US inflation data. Fundamentalists are forward-looking in the sense that they believe in a present-value relationship between inflation and real marginal costs, while naïve are backward-looking, using the simplest rule of thumb, naive expectations, to forecast future inflation. Agents switch between these different forecasting strategies conditional on their recent relative forecasting performance. The estimation results support behavioral heterogeneity and the evolutionary switching mechanism, with substantial time variation in the weights of forward-looking and backward-looking behavior.
We also study expectations formation in laboratory learning-to-forecast experiments in the New Keynesian setting and study how different monetary policy rules can stabilize heterogeneous expectations. Four different aggregate outcomes of inflation and output are observed: convergence to some equilibrium level, unstable exploding behavior, persistent oscillatory behavior and oscillatory convergence. We fit a heterogeneous expectations model with a performance-based evolutionary selection among heterogeneous forecasting heuristics to the experimental data. A simple heterogeneous expectations switching model fits individual learning as well as aggregate macro behavior and outperforms homogeneous expectations benchmarks. Moreover, in accordance to theoretical results in the literature on monetary policy, we find that an interest rate rule that reacts more than point for point to inflation has some stabilizing effects on inflation in our experimental economies, although convergence can be slow in presence of evolutionary learning.

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