Modeling the Dynamics of EU Economic Sentiment Indicators: An Interaction-Based Approach

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Abstract. This paper postulates and estimates a simple univariate model of expectation formation in continuous time. The framework is applied to a selected dataset on survey-based expectations from the rich EU business and consumer survey database for twelve European countries. The model parameters are estimated through maximum likelihood by numerically solving the relevant Fokker-Planck equation via finite difference approximations. The model's goodness-of-fit is checked with respect to its out-of-sample forecasting performance relative to univariate time series models of the ARMA(p, q) and ARFIMA(p, d, q) varieties. These tests speak for the slight superiority of the canonical continuous-time model over the alternatives in the majority of cases.

Keywords. Expectation formation, survey-based expectations, continuous-time models, Fokker-Planck equation, forecasting.