Mixed Frequency Data in a Multiproduct (S, s) Pricing Model

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Abstract

In order to obtain meaningful results from models of sticky prices, it is crucial to have high frequency (such as monthly) data on prices. If explanatory variables, such as wage costs, are observed at all, these are typically on a lower frequency (yearly) and prices are therefore, often, aggregated to that same low frequency. In this paper, we propose a mixed-frequency stochastic (S, s)-model, which exploits the relatively high frequencies of prices in combination with plant- and product-specific components both in the price-, costs- and threshold-equations.

The model is formulated as a non-linear state space model and is estimated by means of the R-package 'TMB', see Kristensen et al. (2016). The estimation procedure allows us to formulate the model as if the explanatory variables are observed at the same frequency as the prices, enhancing computational efficiency. The results, based on merged survey- and register-data, document economies of scope in price adjustment within the plant together with a great share of plant-, product- and season-specific heterogeneity. However, the overall findings align with existing literature. Finally, time-aggregation blurs the intermittency in price changes.