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Real-Time Nowcasting of Nominal GDP with Structural Breaks*

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Abstract

This paper provides early assessments of current U.S. Nominal GDP growth, which has been considered as a potential new monetary policy target. The nowcasts are computed using the exact amount of information that policy makers have available at the time predictions are made. However, real time information arrives at different frequencies and asynchronously, which poses the challenge of mixed frequencies, missing data, and ragged edges. This paper proposes a multivariate state space model that not only takes into account asynchronous information inflow it also allows for potential parameter instability (DYMIBREAK). We use small scale confirmatory factor analysis in which the candidate variables are selected based on their ability to forecast nominal GDP. The model is fully estimated in one step using a nonlinear Kalman filter, which is applied to obtain simultaneously both optimal inferences on the dynamic factor and parameters. Differently from principal component analysis, the proposed factor model captures the comovement rather than the variance underlying the variables. We compare the predictive ability of the model with other univariate and multivariate specifications. The results indicate that the proposed model containing information on real economic activity, inflation, interest rates, and Divisia monetary aggregates produces the most accurate real time nowcasts of nominal GDP growth.

Keywords: Mixed Frequency, Ragged Edges, Real-Time, Nowcasting, Missing Data, Nonlinear, Structural Breaks, Dynamic Factor, Monetary Policy.

JEL Classification: C32, E27, E31, E32

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