

Mixed causal-noncausal models

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ASSERTIONS (STELLINGEN)

ACCOMPANYING THE THESIS

MIXED CAUSAL-NONCAUSAL MODELS

IDENTIFICATION, ESTIMATION AND INFERENCE

BY

SEAN TELG

1. The luxury assumption of normality in the original Box-Jenkins methodology is often not appropriate for macroeconomic and financial data. Hence, it is justified to claim that the imposition of a non-Gaussian error term is not restrictive and only naturally opens the door for identifying backward- and forward-looking behavior.
(Chapter 2, 3, 4, 5, 6)
2. The fatter the tails of the distribution, the faster the convergence of the estimator and the more accurate the identification of the model in finite samples. (Chapter 2)
3. Seasonal adjustment methods based on linear filters increase the dynamic order detected by a model selection procedure based on information criteria, but (non)causality of the original process is preserved. (Chapter 3)
4. In theory, the mixed causal-noncausal model with exogenous regressors can be identified even under Gaussianity by considering both the cross-covariance between the dependent variable and a lag of the exogenous regressors, as well as the cross-covariance between the dependent variable and a lead of the exogenous regressors.
(Chapter 4)
5. Using a set of lead instruments (in addition to the conventional lag instruments) within a canonical correlation or GMM framework can lead to the detection of additional common features that are generated in the forward- looking dynamics of the series. (Chapter 5)
6. In a world that is becoming increasingly more complex, at least one thing seems to have become more simple. In the industry, economists, applied econometricians, statisticians: they are all called “data analysts/scientists”.
7. Every model is wrong because it is just a simplification of reality. However, a map is also a type of model that is inherently wrong. Yet, almost everybody believes that the world looks exactly as the map dictates.
8. According to Wikipedia, econometrics is the quantitative analysis of actual economic phenomena based on the concurrent development of theory and observation, related by appropriate methods of inference. Yet, I believe every econometrician had to resort to the “economics with a lot of mathematics and statistics”-definition at least once in his/her life.
9. Most of the knowledge valorization in this dissertation might be wishful thinking, but the R package **MARX** has been downloaded (hopefully not just because of its appealing name) more than 700 times since June 2017.
10. It is incredible to experience that research (and in particular programming) can make you feel completely helpless the one day, and absolutely victorious the other day.