

Speaker: Alex Gibberd (Lancaster University)

Date: 07/03/2023 at 13:15 in 8 West 2.20

Title: Temporal Disaggregation and Regularised GLS Estimation

Abstract:

In this talk I will present some of our recent work developing a so-called "sparse temporal disaggregation" methodology, this will be followed up with a discussion of some more abstract/theoretical results on a class of closely related generalised least-squares (GLS) estimators. The methodology is motivated by applications in economics whereby we wish to obtain higher frequency, and more timely measures of economic activity. For example, in the talk, we try to understand trade-flows at the monthly level, whilst the traditional survey based measures are returned only quarterly. To tackle this task, we propose a regularised extension of the classic Chow-Lin method, and perform a lasso style regression of a low-frequency time-series onto a set of aggregated (but ultimately higher frequency) indicator series. Unlike previous approaches, our method can utilise many dozens/hundreds of such indicator series and attempts to choose a sparse subset of indicators to include in the model. The second part of the talk will consider properties of this class of estimators more generally, i.e. we consider correcting for autocorrelation in the lasso with a feasible GLS estimator. I will present some empirical and theoretical results for these estimators, with the benefits most pronounced when the error process has a highly persistent autocorrelation structure.

This is joint work with Luke Mosley and Kaveh Salehzadeh Nobari.