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Comment on Article by Wyse et al.

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1 Introduction

Computation can be a serious challenge in multiple changepoint models especially when simulation methods are used. This paper, building on earlier contributions such as Fearnhead (2006), makes an important contribution in addressing this challenge. The main contribution of the present paper is, through the use of INLAs, to extend the feasibility of such methods to a wider class of likelihood functions by allowing for data that is dependent within segments. An additional contribution is the development of reduced filtering recursions which further decreases the computational burden. These methods will be found useful in a wide variety of empirical applications.

In economics there is a large changepoint (or structural break) literature. Papers such as Stock and Watson (1996), Ang and Bekaert (2002) and Bauwens et al (2011) find empirical evidence of widespread parameter instability in macroeconomic and financial time series. Clements and Hendry (1998) argue that structural breaks are the main reason for forecast failure. Pesaran, Pettenuzzo and Timmermann (2006), Koop and Potter (2007) and Maheu and Gordon (2008), among many others, develop forecasting methods for changepoint models. My comments will focus on the issue of how the methods proposed in the paper can be used in the context of this economic literature.

2 Forecasting with Changepoint Models

My reading of the experience of economists can be summed up with the phrase: priors are important. We require priors for θ_j (the parameters which characterize the likelihood in regime j), τ_j for $j = 1, .., k$ (the changepoints) and k (the number of changepoints).[1] Each of these is important and my comments will deal with each in turn.

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[1]Throughout this note, I use the same notation as in the paper itself.

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