UNIVERSITY OF SYDNEY

SCHOOL OF MATHEMATICS AND STATISTICS

Statistics Seminar

Friday June 15, 2.00pm., Carslaw Lecture Room 173 (level 1)

Trend Estimation for Repeated Surveys using Rotation Group Estimates

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Abstract

Trend estimates can be obtained from a repeated survey by applying filters, such as Henderson Moving Averages, to seasonally adjusted estimates produced from X11. These filters assume independent sampling errors. Repeated surveys often use designs in which there is a degree of overlap between the samples in different time periods, leading to correlations between the sampling errors. The sample overlap is determined by the rotation pattern, which is the pattern of selected units' inclusion in the sample over time. Steel and McLaren (2000) developed a general approach to obtaining trend filters for a repeated survey which accounts for the correlation structure induced by the rotation pattern used in the survey. In this paper we show how different filters can be developed depending on whether the trend analysis is based on elementary estimates available for each rotation group or overall estimates obtained by combining the rotation group estimates. The properties of trend estimates obtained directly from the elementary estimates, those obtained from the simple average of the rotation group estimates and using best linear unbiased estimates are compared for a number of rotation designs.

This work is joint with Craig H. McLaren, Methodology Division, Australian Bureau of Statistics, ACT

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