Practical application of seasonal adjustment methods to treat disruption and uncertainty due to COVID-19

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Abstract:
The COVID-19 pandemic has severely affected many of the time series produced by National Statistical Offices (NSOs), and left untreated the impacts would distort outputs from the seasonal adjustment process. Considering the large number of series published by an NSO, it was essential that a systematic approach to treating the disruption was adopted from the onset of the pandemic. In practice, the choice of approach to manage a large-scale disruption like COVID-19 is constrained by staff resources and the functionality provided by the NSO's seasonal adjustment infrastructure. In this talk I discuss the seasonal adjustment methods adopted by the Australian Bureau of Statistics in response to the COVID-19 disruption. I discuss the rationale underlying the principles used to decide the most appropriate interventions to apply with the X-12-ARIMA method. The disruption and uncertainty considerably affected the utility of some time series outputs, and I describe how assessment of utility guided decisions on suspending publication of some outputs. In the final part of the talk I present some ideas considered for dealing with the potential challenge of the pandemic causing an abrupt and persistent change to the pattern of seasonal variation.

Keywords:
Time series; Official statistics; X-12-ARIMA