health and social consequences, the imperative to provide food aid to North Korea may well outweigh such concerns.

References

Ad hominen or ad rem? Good autocorrelation or bad?

Ralph Catalano

School of Public Health, University of California Berkeley, 322 Warren Hall, Berkeley, CA 94720, USA.
E-mail: rayc@berkeley.edu

Rodriguez et al.1 have invoked two defences against my commentary2 on their recent report of an association between Republican presidencies and infant mortality.3 First, they label my criticism as ‘ad hominen’. This powerful juju implies that I could find no fault in their argument and could discredit it only by discrediting them. I think most readers of JIE will find my criticisms entirely ad rem. I, moreover, had no need to resort to ad hominem criticism since the paper in question presented much to criticize.

Second, the authors claim that ARIMA modelling identifies and controls for higher-order autocorrelation that arises from public policy and does not, therefore, provide a fair test of their hypothesis. To put it simply, the authors imply that autocorrelation in a time series divides into good and bad—bad includes that which makes the estimation of confidence intervals difficult whereas good includes that which induces association between the dependent and independent variables. They further claim that when they applied a (2,1,2) ARIMA model to the infant mortality data they still found an association. I believe I have a credible record as a time-series analyst. As such, I can find no identification strategy by which a (2,1,2) ARIMA model would fit the US infant mortality series.

As Bayes described long ago, whether association arising from shared autocorrelation makes us more confident about a causal argument depends on our ‘priors’. Those who believe, as a matter of political faith, that Republican presidents do bad things to the governed will find shared autocorrelation compelling evidence of causation. Those who want Republicans to govern will dismiss the association by citing, explicitly or intuitively, the Granger/Wiener causality theorem. The rest of us will go on wondering how to understand ‘political epidemiology’. How does it differ from political economy, policy analysis or...
programme evaluation? Can we agree a line at which it becomes rhetoric? And when we offer time-series associations as evidence, does whether we control for autocorrelation influence where we draw that line?

References


Authors’ response: Politicization with misrepresentation: on de-trending in time series analysis

Javier M Rodriguez,1 John Bound1,2 and Arline T Geronimus1,3*

1Population Studies Center, Institute for Social Research, 2Department of Economics and 3School of Public Health, University of Michigan, Ann Arbor, MI, USA
*Corresponding author. Population Studies Center, Institute for Social Research, University of Michigan, 426 Thompson Street, Ann Arbor, MI 48106-1248, USA. E-mail: arline@umich.edu

Professor Catalano referred to our good faith and peer-reviewed empirical article1 as equivalent to ‘dog food, the grocer would have to pull…from the shelf’.2 He attributed political motives to us as the basis for our findings. Call us crazy, but we stand by the view that such criticisms are ad hominen, and far from ad rem. Despite that, and Professor Catalano’s current claim to the contrary, in our initial rejoinder3 we explicitly acknowledged that his commentary also included a number of serious substantive arguments. Indeed, the vast majority of our response involved a detailed discussion of the substantive points he made, most of which he does not acknowledge in his current letter. Instead, Professor Catalano continues to politicize our motives and misrepresents our response in an additional way.

Professor Catalano says that we claimed that when we used an ARIMA model to ‘filter’ out a trend from the time series data on infant mortality, we continued to find a statistically significant and quantitatively important association between the residuals from this filtering process and the president’s party. We actually claimed the opposite.3 If one removes the trend from the infant mortality series using standard procedures in the literature such as cubic splines or simple or fractional polynomials, visual inspection of the residuals shows a pattern that strikingly mirrors the pattern of changes in the party of the president (see Figure 2 in our article1). If one removes the trend using an ARIMA model, there is no evident pattern in the residuals.

Our disagreement with Professor Catalano is whether, for our research purpose, we should be de-trending using a variety of cubic splines or polynomials, or using an ARIMA model. The figure in our response to Professor Catalano’s commentary was meant to illustrate the difference between our preferred de-trending method and a best-fitting ARIMA model.3 [For fit statistics of nine different ways of de-trending the series see Table 1 and its discussion in the appendix to our paper (available as Supplementary data at IJE online)]. As the figure in our response3 illustrates, fitting an ARIMA process to the infant mortality series would filter out the variation that exists in low and medium frequencies of the data.

This is critical. To exemplify the nature of the variation contained in the infant mortality series, we reported the results of our Fourier decomposition series analysis in the appendix to our article1 (available as Supplementary data at IJE online). It formally shows the infant mortality series includes both low frequency variation (the downward trend) and medium frequency variation. This medium-run variation has a period of approximately 16 years, and it mirrors the president’s party, rising during the years in which the president was a Republican and falling during years in which the president was a Democrat. This need not have been true.

Professor Catalano misunderstands our cubic spline procedure to de-trend the data and the rationale behind what constitutes a trend and what does not. In theory, a depiction...