Propositions

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1. When forecasting under Markov switching data generating processes, reducing regime uncertainty offers larger gains in terms of mean squared forecast error, than reducing parameter uncertainty (Chapter 2)

2. Even when the parameters of the underlying model are subject to large structural breaks, modeling breaks of unknown timing can increase the mean squared forecast error compared to forecasts from a linear model (Chapter 3)

3. Equal predictive ability between a linear model and a model that allows for a single structural break in the model parameters, can be tested with near optimality even when the break date is unknown (Chapter 3)

4. In the classic linear regression model, a uniform improvement over the mean squared error of the least squares estimator can be achieved by shrinking the coefficients such that under repeated sampling of the data, 50% of the time all variables are removed from the model while they are in fact related to the outcome variable (Chapter 4)

5. With a large number p predictors available, averaging over forecasts from all subsets containing $k < p$ predictors is a good excuse for a holiday, but $O(p \log p)$ is sufficient for accurate forecasts (Chapter 5)

6. To assess the effectiveness of a statistical method, results from Monte Carlo simulations where the data generating process can be controlled, are more informative than empirical examples

7. With the increase of wide and short datasets, the relevance of frequentist methods hinges on the possibility to conduct valid statistical inference when the number of variables exceeds the number of observations

8. Coupling job security with scientific productivity introduces an incentive to abandon innovative research projects with an inherently higher risk of failure [Foster, J.G., Rzhetsky, A., and Evans, J.A. "Tradition and innovation in scientists research strategies." American Sociological Review 80.5 (2015): 875-908.]

9. Estimates of teaching effectiveness based on anonymous student evaluations are biased due to self-selection, and therefore unsuited to act as a single measure of teaching performance

10. The environmental cost associated with large scientific conferences is not justified based on the (lack of) evidence for their effectiveness to stimulate scientific output

11. Funding agencies do not worry: useful findings tend to be an unavoidable byproduct of seemingly useless science