Optimal Model Averaging Weights under Asymmetric Loss*

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Abstract

Prediction problems based on asymmetric loss functions arise routinely in many fields and has a rich heritage in both theory and application. In this talk, we extend this literature by first developing and then demonstrating the benefits of using a new econometric strategy under LINEX loss function, when there is uncertainty in the model specification. We propose a model average estimator with weights selected by minimizing a LINEX model averaging(LMA) criterion. We prove that the LMA estimator is asymptotically optimal in the sense of achieving the lowest possible LINEX loss. We demonstrate the potential efficiency gains of using the LMA method through Monte Carlo simulation. The results show that the LMA estimator excels at reducing asymmetric loss comparing to many other methods. We also apply the LMA method in a movie forecasting application. We find out that that the LMA estimator excels at reducing asymmetric loss comparing to many other methods and performs reasonably well under symmetric loss.