

Report on “Black Swans, Dragon Kings, and Bayesian Risk Management”

This paper employs Bayesian risk management to managing risks.

We have the following comments to the authors to improve their paper:

- 1) The authors should discuss how to choose the prior and what types of priors could perform better.
- 2) The authors claim that their approach can handle the situation in which the judgment of experts is subjective and sometimes, plurality can be obtained. The authors should discuss how their approach could handle the issue in detail.
- 3) On page 6, the authors assert that their approach can be “a basis for inferring catastrophes to come”. The authors should illustrate more on how their approach could make it.
- 4) The authors should discuss the shortcomings of BRM and under what situations, frequentist risk paradigm could be used.
- 5) The authors should incorporate some useful existing Bayesian approach in their model. For example, the robust Bayesian estimator developed by Bian and Dickey (1996) and illustrated by Wong and Bian (2000) is robust to outliers and flat-tailed sample distribution. Guo, Lam, Wong, and Zhu (2012) introduce a new pseudo-Bayesian model to incorporate the impact of a financial crisis and investors' beliefs. These models and others could be used to improve their model.
- 6) They should use real data to illustrate their approach and compare the performance of their approach with some existing models.

References

Bian, G. and J.M. Dickey, 1996, Properties of multivariate Cauchy and poly-Cauchy distributions with Bayesian g-prior applications. in Bayesian Analysis in Statistics and Econometrics: Essay in Honor of Arnold Zellner, edited by D.A. Berry, K.M. Chaloner and J.K. Geweke, John Wiley & Sons, New York, 299-310.

Wong W K and G Bian, (2000), "Robust Bayesian Inference in Asset Pricing Estimation", Journal of Applied Mathematics and Decision Sciences, 4(1), 65-82.

Guo, Xu & Lam, Kin & Wong, Wing-Keung & Zhu, Lixing, 2012. "A New Pseudo-Bayesian Model of Investors' Behavior in Financial Crises,"MPRA Paper 42535, University Library of Munich, Germany.