Annotated Bibliography

Contents

1 Computational Methods

- Snyman, J. A. (2005). *Practical Mathematical Optimization: An Introduction to Basic Optimization Theory and Classical and New Gradient-Based Algorithms*. Springer Science & Business Media, New York City, NY

  The book provides a very nice introduction to some practical issues in optimization. It will be useful to revisit when we tackle computational aspects of structural model estimation.

Miscellaneous

- Heyman, D. P. and Sobel, M. J. (2003). *Stochastic Models in Operations Research, Vol. II: Stochastic Optimization*. Dover Publications, Mineola

  This book contains a highly useful exposition of the expected utility theory and its use in operations research in Chapter 2. The chapter is available as a pdf.

- Smith, R. C. (2014). *Uncertainty Quantification: Theory, Implementation, and Applications*. SIAM-Society for Industrial and Applied Mathematics, Philadelphia

  A highly readable introduction to uncertainty quantification.

- Huber, P. J. and Ronchetti, E. M. (2009). *Robust Statistics*. Wiley Series in Probability and Statistics. John Wiley & Sons, 1st edition

  This is the foundational textbook for robust statistics. It defines robustness as insensitivity to small deviations from the assumptions. The book is primarily concerned with distributional robustness, i.e. the shape of the true underlying distribution deviates slightly

from the assumed model. Another textbook introduction is provided by Maronna et al. (2006).

- Wise, D. A. (1985). A behavioral model versus experimentation: The effects of housing subsidies on rent. In Brucker, P. and Pauly, R., editors, *Methods of Operations Research*, volume 50, pages 441–489. Verlag Anton Hain, Frankfurt am Main, Germany, 1st edition

  This paper is often cited in the context of validation a behavioral model using experimental data. However, the behavioral model itself is just very, very simple.

- Skiadas, C. (2009). *Asset Pricing Theory*. Princeton Series in Finance. Princeton University Press, Princeton, NJ, 1st edition

  A textbook introduction to asset pricing, it is very nicely written and in particular Chapter 4 on risk aversion is a very good overview on the topic. Also, he always includes a lot of notes at the end of each chapter that are a very informative on the ongoing developments and discussions in the literature.

- Köhn, J. (2017). *Uncertainty in Economics: A New Approach*. Springer, New York City, NY

  In this book the author develops a new approach to uncertainty in economics, which calls for a fundamental change in the methodology of economics. It provides a comprehensive overview and critical appraisal of the economic theory of uncertainty and shows that uncertainty was originally conceptualized both as an epistemic and an ontological problem. As a result of the economic professions' attempt to become acknowledged as a science, the more problematic aspect of ontological uncertainty has been neglected and the subjective probability approach to uncertainty became dominant in economic theory. A careful analysis of ontological theories of uncertainty explains the blindness of modern economics to economic phenomena such as instability, slumps or excessive booms. Based on these findings the author develops a new approach that legitimizes a New Uncertainty Paradigm in economics.

  - useful for numerous non-conventional references on the role of uncertainty in economics

References

Heyman, D. P. and Sobel, M. J. (2003). *Stochastic Models in Operations Research, Vol. II: Stochastic Optimization*. Dover Publications, Mineola.

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Köhn, J. (2017). *Uncertainty in Economics: A New Approach*. Springer, New York City, NY.

Maronna, R. A., Martin, D. A., and Yohai, V. J. (2006). *Robust Statistics: Theory and Methods*. Wiley Series in Probability and Statistics. John Wiley & Sons.

Skiadas, C. (2009). *Asset Pricing Theory*. Princeton Series in Finance. Princeton University Press, Princeton, NJ, 1st edition.

Smith, R. C. (2014). *Uncertainty Quantification: Theory, Implementation, and Applications*. SIAM-Society for Industrial and Applied Mathematics, Philadelphia.

Snyman, J. A. (2005). *Practical Mathematical Optimization: An Introduction to Basic Optimization Theory and Classical and New Gradient-Based Algorithms*. Springer Science & Business Media, New York City, NY.

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