

WU Gutmann Center Public Lecture

“A Sharper Ratio”

Prof. Kent Smetters

The Wharton School

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Bank Gutmann AG, Schwarzenbergplatz 16, 1010 Wien



Abstract

Deriving a sufficient statistic for the standard Expected Utility (EU) problem with a risk-free asset and a risky asset following a non-Normal risk distribution has been a problem that has dogged economists since at least Samuelson (1970). This problem is only heightened by modern trading strategies that produce non-Normal returns and where the classic Sharpe Ratio is no longer sufficient. We prove a new lemma about root selection in a complex plane, allowing us to derive a minimal, sufficient statistic that requires less information than the original EU problem. Moreover, we prove that the sufficient statistic transforms non-Normal, non-identical risks into a Normally-distributed function space, while preserving the original EU ordering. As a result, the sufficient statistic supports parametric-based hypothesis testing, which we show is substantially more powerful than non-parametric hypothesis testing required for the EU problem.

About Kent Smetters

Kent Smetters is the Boettner Chair Professor at the University of Pennsylvania's Wharton School and a Faculty Research Fellow at the National Bureau of Economic Research. His research focuses on applied theory, optimal fiscal policy, personal finance and asset pricing. Previous policy positions include the Congressional Budget Office (1995 to 1998) as well as Deputy Assistant Secretary (Economic Policy) for the United States Treasury (2001-2002). He has published academic articles in leading journals, including American Economic Review, Journal of Political Economy, and The Quarterly Journal of Economics. Kent Smetters received his PhD in Economics from Harvard University.

More information about Kent Smetters:

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