Risk Measure Inference[1]
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Abstract

We propose a widely applicable bootstrap based test of the null hypothesis of equality of two firms' Risk Measures (RMs) at a single point in time. The test can be applied to any market-based measure. In an iterative procedure, we can identify a complete grouped ranking of the RMs, with particular application to finding *buckets* of firms of equal systemic risk. An extensive Monte Carlo Simulation shows desirable properties. We provide an application on a sample of 94 U.S. financial institutions using the ΔCoVaR, MES and %SRISK, and conclude only the %SRISK can be estimated with enough precision to allow for a meaningful ranking.

Keywords: Grouped Ranking, Risk Measures, Bootstrap, Uncertainty.

1. Introduction

Financial risk management is fundamentally based on the comparison of a given risk measure for different assets, portfolios or financial institutions. Many examples can be cited: the comparison of the market risk for two portfolios, measured by their volatilities, their value-at-risk (VaR) or their expected shortfall (ES), the comparison of the systematic risk of two assets measured by their beta, the comparison of the systemic risk of two financial institutions according to a systemic risk measure or a score of systemic importance (Basel Committee on Banking Supervision, 2013) and