Statistical Assessment on CVaR Publications in Management Innovation

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The value at risk (VaR) is a financial asset or portfolio, a certain probability level (confidence) of securities the maximum possible loss within a specific period in the future.

The calculated VaR method was divided into parameter method, nonparametric and semi-parametric method. The core mechanism of VaR is to determine statistical distribution and the probability density function of portfolio proceeds.

In the most cases, portfolio returns were assumed to be independent and followed with normal distribution.
At present, CVaR has been widely applied in the fields of ecological environment, engineering, services, commercial and economic risk calculations, and so on.

Its development also gathered more people's attention, but also the focus of scholars to study the global financial industry and issues, and research methods also are becoming mature.
The Outline

- Introduction
- Methodology
- Results Analysis
- Conclusion
The method of complex networks was used here.

UCnet software was also employed for visualization.
Research Methodology

- Database: Web of Science
- Timespan: 1950-2012
- Retrieval data: 2013.9
- Total record: 5,863

Retrieval strategy:
Topic = (Condition* Value* at Risk* or CVaR*).
Four Knowledge Networks

- Citation Networks;
- Cooperation Networks;
- Co-words Networks;
- Co-citation Networks;
- And so on......

CVaR related Knowledge Networks
Analysis:

Time span: 1990-2012; Record: 5,863 CVaR Publications
Time cited: 105,880, Average Citation: 18.06;
Reference: 191,606, Average Reference: 32.68;
Ratio for Citation to Reference: 0.553,
Input increasing trend in CVaR production.
Cooperation Networks

Scientific Cooperation Networks
Research Cooperation Networks

* Analysis:
  
  Time span: 1990-2012; Record: 5,863 CVaR Publications
  Single Author Record: 498;
  Coauthor Work Record: 5,365;
  Ratio for Cooperation: 91.5%,
  More cooperation in CVaR production.
Cowords Network
Co-word Networks

* Analysis:

Time span: 1990-2012;
Record: 5,863 CVaR Publications
Author Keywords: 14,374 (14,484),
Average Author Keywords per paper: 2.45;
Cluster in the subject description.
Co-citation Networks

**Analysis:**

Time span: 1990-2012;
Record: 5,863 CVaR Publications;
Number of Reference: 199,606 (199 kind);
Average reference per paper: 32.66;
Number of Referenced Journals: 39,886;
Average Referenced Journals: 6.80;
Reference Authors: 114,113 (128,546);
Average Reference Authors: 19.46.
The impact of the global research performance on CVaR theory base on SCI database has been studied with complex network Methods. Extension of the CVaR research from science was analyzed to summarize the rapid application from research outputs and revealed the key and popular method in the research field of the CVaR theory.

As a meaningful topic, risk management with the CVaR method attracted a lot of researchers’ attention in different subjects all over the world, which can be employed to study the global research trend, helps to study and apply CVaR better.
Some countries such as the USA, Italy, Germany, and England had made an outstanding achievement in the research of CVaR. The USA ranked first both in the quality and the quantity of the papers. Some institutes such as the University of Texas, Harvard University, and University of Washington, produced more papers in the field of CVaR in the world networks.

Meanwhile, core journal of Insurance Mathematics & Economics published most of its papers in recent years. Researchers should pay more attentions to these directions and new publications on these top journals.
Thanks All!