

PROMOTION RECOMMENDATION

The University of Michigan
College of Engineering

Jussi S. Keppo, assistant professor of industrial and operations engineering, Department of Industrial and Operations Engineering, College of Engineering, is recommended for promotion to associate professor of industrial and operations engineering, with tenure, Department of Department of Industrial and Operations Engineering, College of Engineering.

Academic Degrees:

Dr.Tech	1998	Helsinki University of Technology, Applied Mathematics, Helsinki, Finland
M.Sc.	1995	Helsinki University of Technology, Applied Mathematics, Helsinki, Finland
B.Sc.	1994	Helsinki University of Technology, Industrial Economics, Helsinki, Finland

Professional Record:

2007	Visiting Professor, Department of Industrial Economics and Technology Management, Norwegian University of Science and Technology, Trondheim, Norway
2001-Present	Assistant Professor, Department of Industrial and Operations Engineering, the University of Michigan
2001-2003	Visiting Professor, Systems Analysis Laboratory, Helsinki University of Technology, Espoo, Finland
1998-2000	Postdoctoral Researcher, Department of Statistics, Columbia University
1996-1998	Research Manager (part time), Helsinki Energy, Finland

Summary of Evaluation:

Teaching: Professor Keppo is a dedicated and inspiring teacher. His teaching responsibilities have been primarily in financial engineering courses (IOE 452, 453, 552, and 553). He has also developed a new graduate course, IOE/Math/Stat 506 (Stochastic Analysis for Finance). The introduction of this course was timely and critically needed in the curriculum, which attracts students from IOE, the Financial Engineering Program and other departments. Professor Keppo actively introduces new research results into his teaching, and has been successful in engaging students in his class into his research program, further motivating students to continue their Ph.D. studies. Professor Keppo has the ability to challenge his Ph.D. students to do outstanding work while simultaneously providing support and strong mentoring. He has already graduated four Ph.D. students and a fifth is expected to finish this academic year.

Research: Professor Keppo is a member of the Financial Engineering area and his research spans a variety of topics, from energy pricing to irreversible investments to telecommunications and option pricing. It also spans the theory-applications spectrum. Professor Keppo is creative, understands practical context, has great technical expertise and has produced high quality research. He has published 20 journal articles and a book chapter and has received research funding including an NSF grant and two industrial grants to support his research.

Recent and Significant Publications:

Keppo, J., L. Smith and D. Davydov, "Optimal Electoral Timing: Exercise Wisely and You May Live Longer," forthcoming in *Review of Economic Studies*, 2007.
Näsäkkälä, E. and Keppo, J., "Hydropower with Financial Information," forthcoming in *Applied Mathematical Finance* (special issue on electricity markets), 2007.

- Bensoussan, A., J. Keppo and S.P. Sethi, "Optimal Consumption and Portfolio Decisions with Partially Observable Real Prices," forthcoming in the *Mathematical Finance*, 2007.
- Keppo, J., G. Moscarini and L. Smith, "The demand for information: more heat than light," *Journal of Economic Theory*, 138(1), pp. 21-50, 2008.
- Keppo, J., X. Meng and M.G. Sullivan, "A Computational Scheme for the Optimal Strategy in an Incomplete Market," *Journal of Economic Dynamics and Control*, 31(11), 3591-3613, 2007.
- Peura, S. and J. Keppo, "Optimal bank capital with costly recapitalization," *Journal of Business*, 79(4), pp. 2163-2201, 2006.

Service: Professor Keppo has a very strong service record for a junior faculty member. He serves on the IOE Graduate Admissions Committee and chairs the FE Graduate Admissions Committee, both of which require a large time commitment. He also served on the FE Curriculum Committee. Externally Professor Keppo serves on the editorial boards of *Production and Operations Management* and the *Journal of Energy Markets*. He serves on review panels for the National Science Foundation, the Natural Sciences and Engineering Research Council of Canada, and the Academy of Finland. He also is the glue for several external research projects and, as described in his casebook, is a valuable collaborator. IOE and other colleagues across campus all benefit greatly from their interactions with him through his overall intellectual collegiality and generosity in sharing ideas.

External Reviewers:

Reviewer A: "There are very few academics within operations research/engineering with Jussi's experience and background. His background is not only very solid mathematically (stochastic processes, optimization (say)), but includes economics, business and (lately) even a dash of political science. Without people like Jussi, any attempt at sustaining a solid and successful FE program is likely to fail. ... He is clearly central to the financial engineering discipline and is a rare find for any engineering school."

Reviewer B: "My impression is that Professor Keppo is one of the few junior faculty members anywhere in financial engineering with strong understanding of practical contexts, the underlying mathematics, and economic theory. For this combination, I would place him at the highest tier (and cannot think of anyone who would dominate him)."

Reviewer C: "He has skills and variety in collaborators that should help him continue to be an effective researcher in the future. It would not be easy to replace his particular set of skills. His name has been mentioned as someone our [institution] (where I have a courtesy affiliation) should consider."

Reviewer D: "I think Jussi is one of the best researchers [of his cohort] in the areas of applied stochastic control and financial engineering. ... There are very few people who can do rigorous mathematics, interesting economic problems, and statistical tests. Jussi is one of them."

Reviewer E: "In my view, Jussi is in the top group of researchers in financial engineering and stochastic control applications. His work is characterized by creative problem choice and an impressive breath [sic] of application domains (which range from telecommunications and problems in energy and electricity markets to financial engineering and options pricing)."

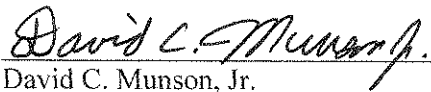
Reviewer F: "This body of work on applications of stochastic control in economics now includes five top-tier publications. I see it as a major progress in Jussi's career. Over the past several years he has been able to initiate collaborations with a number of top researchers in mathematical economics and produced a series of top tier publications."

Reviewer G: "Dr. Keppo has made important contributions in financial engineering, including applications in energy systems and in telecommunications, in economics, and to a lesser extent, has

contributions at the interface of these areas with operations management. ... In my view, the impact, breadth, and intellectual depth and the number of his publications, place Dr. Keppo as one of today's foremost young researchers in financial engineering."

Reviewer H: "Overall I have been impressed with Dr. Keppo's work which I find to be very creative in terms of choice of topics and cleverness of the analysis. ... In terms of stature Jussi Keppo is recognized as one of the leaders in his cohort in the OR community doing research in financial engineering and risk management."

Summary of Recommendation: Professor Keppo is a gifted researcher and inspiring teacher who contributes large amounts of time to service both internally and externally. His research employs stochastic modeling in novel and creative ways to produce applications-driven theory with a practical context. His work is representative of the best kind of interdisciplinary research involving people from other disciplines and integrating methods and models from a variety of disciplines. He has mentored undergraduate and graduate students and is an excellent colleague. It is with the support of the College of Engineering Executive Committee that I recommend Jussi S. Keppo for promotion to associate professor of industrial and operations engineering, with tenure, Department of Department of Industrial and Operations Engineering, College of Engineering.



David C. Munson, Jr.
Robert J. Vlasic Dean of Engineering
College of Engineering

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