

*The Hong Kong Polytechnic University
Department of Logistics and Maritime Studies
Research Seminar*

Audit and Remediation Strategies in the Presence of Evasion Capabilities

by

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Venue: M106, Li Ka Shing Tower
The Hong Kong Polytechnic University

(Conducted in English)

Abstract:

In this talk, we provide managerial insights on how to uncover an adverse issue that may occur in organizations with the capability to evade detection. To that end, we formalize the problem of designing efficient auditing and remediation strategies as the optimal stochastic control of a piecewise deterministic Markov process. In this set-up, a principal seeks to uncover and remedy an issue that occurs to an agent at a random point in time, and which harms the principal if not addressed promptly. This occurrence is the agent's private information. Further, the agent can exert effort to render the principal's audits ineffective at discovering the issue. We fully characterize, in closed form, the corresponding optimal policy, which can be implemented as a dynamic remediation cost-sharing mechanism with cyclic audits. We show that the strength of the agent's evasion capability changes the nature of the audit policy. When the effort cost is high (i.e., the evasion capability is weak) the principal runs the audit according to a pre-determined schedule. However, when the effort cost is low (i.e. the evasion capability is strong), the audit schedule becomes random. Further, as the effort cost increases and the evasion capability becomes more limited, the principal audits the agent more frequently, which overall results in higher audit costs. (Joint work with Francis de Vericourt and Peng Sun).

Bio:

Shouqiang Wang is an assistant professor of operations management at Naveen Jindal School of Management in the University of Texas at Dallas. He has broad research interests in strategic decision making problems in business sectors (operations management, supply chain, marketing) and public policies (sustainable operations, environmental regulations, healthcare, national defense). In particular, an overarching theme of my research is to identify managerial and operational solutions to improve efficiency and mitigate misalignment of incentives among decentralized entities, in the presence of asymmetric information and dynamic strategic interactions in these contexts.

He has successfully developed and delivered several new courses at both undergraduate and master levels, including Spreadsheet Modeling and Analytics, Quantitative Introduction to Risk and Uncertainty in Business, Decision Models, Operations Management, Sourcing and Supplier Management, Logistics Management.

Prior to joining UT Dallas, he was on faculty of Clemson University. He earned his PhD from Fuqua School of Business at Duke University

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All are welcome!