SBMT4000 SBM Undergraduate Honors Research Project

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<tr><th>Code</th><th>Supervisor Name</th><th>Email</th></tr>
<tr><td>ISOM02</td><td>Lijian LU</td><td>lijianlu@ust.hk</td></tr>
<tr><th colspan="3">Project Summary</th></tr>
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Topic: Smart Contracts, Credit Risk, and Financing Decisions in Supply Chains

Description:

The rapid growth of blockchain technology and digital finance is transforming how firms manage payments, financing, and risk within supply chains. Smart contracts—self-executing agreements that automatically enforce contractual terms—have attracted considerable attention from businesses, financial institutions, and policymakers as a mechanism for improving transparency and reducing financial frictions. Yet an important question remains largely unanswered: How does the introduction of smart contracts change firms' financing decisions and strategic interactions within a supply chain?

This research project investigates the economic value of smart contracts in supply chain finance. Specifically, it examines how payment enforcement technologies affect credit risk, financing costs, operational decisions, and profit allocation among supply chain participants. The project focuses on a fundamental tradeoff: while smart contracts can reduce repayment risk and improve financial discipline, they may also alter incentives and bargaining power among firms, leading to unexpected consequences for supply chain performance.

Using analytical models from operations management and economics, students will study how suppliers, manufacturers, and financial institutions interact under different financing arrangements. Potential topics include factoring, trade credit, blockchain-enabled financing platforms, and digital payment systems. Students will formulate research questions, develop theoretical models, derive equilibrium outcomes, and generate managerial insights regarding when smart contracts create value and who benefits from their adoption.

This project is practically important because supply chain finance represents a multi-trillion-dollar global market, and firms increasingly rely on digital technologies to improve financial resilience and operational efficiency. Academically, the project contributes to emerging research at the intersection of operations management, finance, and information systems by providing a rigorous economic understanding of how technology reshapes incentives, contracts, and decision-making in modern supply chains.

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