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PhD Candidate
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Research Interests:
· Information Asymmetry and Forecasting Sharing
· Inventory Pooling
· Behavioral Aspects in Operations Management
· Global Health

Research Abstract

“INVENTORY POOLING PRACTICES IN THE PRESENCE OF INFORMATION ASYMMETRY AND PLAYERS’ STRATEGIC INTERACTION”

My research focuses on inventory pooling practices in the presence of information asymmetry and on supply chain players’ strategic interaction in such a context. I am particularly interested in forecast information sharing along supply chains and mechanisms that induce truthful communication and trust. My general interest lies in the intersection of individual decision-making and operations (behavioral operations).

My working paper “Inventory pooling and allocation dynamics in the presence of information asymmetry” focuses on the impact of inventory pooling and stock allocation mechanisms on total and individual profits of retailers forming a pooling coalition, when each retailer has private information about his demand. We consider situations where a number of firms, each operating in a separate market and acting as monopolists, consider pooling inventories together at a central location to satisfy their local demand more efficiently, delegating their inventory management to a central planner. We employ a two-stage information sharing and inventory allocation game and we explore a) whether retailers have an incentive to truthfully communicate their demand forecasts to the central planner who decides on the total inventory to be held and b) if a Pareto-efficient allocation mechanism of the centralized inventory can be implemented.

My previous work is related to global health, public policy and epidemiology. My working paper “Impact of Treatment Heterogeneity on Drug Resistance and Supply Chain Costs” studies the tradeoff between risk of drug resistance and operational costs when using multiple drugs for a specific disease. Using a simple model for disease transmission and resistance spread we show that treatment with multiple drugs results in better resistance-related health outcomes, but more interestingly, the additional benefit decreases as the number of drugs used increases.

We compare this benefit with the corresponding increase in procurement and safety stock holding costs that result from higher variety in the supply chain. Using a large scale numerical analysis, we show that disease endemicity seems to be a less important factor when deciding the optimal width of drug assortment, compared to the duration of the disease and the price of the drug(s) used. Our model lends insights to policy makers into the socially optimal size of drug assortment for a given population.