Economics and the Supply Chain

The application of economic theory has been a recent and exciting innovation in the research of supply chain management. This session focuses on the integration between supply chains and economics with an emphasis on recent research, application and future prospects. The session is divided into three parts: (1) slotting allowance in the supply chain; (2) empirical research; and (3) negotiations and long term relationships. We briefly describe each part below and include several questions to motivate discussion during the session.

Supply chain research and policy debate: the case of slotting allowances. Fangruo Chen (Columbia)

The question to be discussed in this session are

1. What are slotting allowances and why are they controversial?
2. Can supply chain research shed light on the debate on the purposes and consequences of slotting allowances?
3. Are there other examples of controversial (supply chain) practices and what can we contribute to the understanding of those controversies?

Reading: Report on the FTC Workshop on Slotting Allowances and Other Marketing Practices in the Grocery Industry

Empiricism in supply chain management research. Gerard Cachon (Wharton)

Although there has been an explosion of theoretical work on supply chain operations and incentives, what do we really know about how real supply chains operate or how supply chain contracts are used? This part of the session explores some reasons for the lack of empiricism in supply chain research and proposes some remedies. Preliminary results will be presented on an empirical research project that searches for evidence of the celebrated bullwhip effect.

Questions:
Is there a lack of empiricism in supply chain management? If so, why?
What are some hypotheses that you would like tested?
Is the bullwhip effect a widespread phenomenon, or merely a good story?
Please bring a list of your favorite empirical papers in supply chain management.

The following article is mentioned as an example of supply chain empiricism. It will not be directly discussed: Hendricks, K., V. Singhal. 2003. An empirical analysis of the effect of supply chain disruptions on operating performance. Georgia Tech working paper.

Crucial Issues in the Modeling of Supply Chain Contracts: Renegotiation and Repeated Interaction. Erica Plambeck (Stanford) and Terry Taylor (Columbia)

The scope and effectiveness of formal, legally-binding contracts is often limited (for example, by enforceability concerns). In such contexts, formal contracts may need to be renegotiated or firms may rely on informal agreements alongside or in place of formal contracts. We begin this part with a focus on renegotiation. Supply contracts are used to reveal private information and/or create incentives for investment in capacity, inventory, or activities that stimulate demand. In practice, supply contracts do not provide for all possible future contingencies. When customer demand and the variable costs of production are realized, the production and delivery schedule dictated by the contract may be grossly suboptimal. Then supply chain partners can and will renegotiate the supply contract. The potential for contract renegotiation affects incentives for information-sharing and investment. Simple contracts with renegotiation can perform as well as complex, complete contingent contracts.

We next consider repeated interactions among supply chain firms. In business practice managers stress the importance of long-term relationships in assuring success. The scope for opportunistic behavior may be large and if firms anticipate interacting only once there may be little to restrain firms from such behavior. However, firms may behave substantially differently if they anticipate the potential for repeated interaction, adopting informal agreements that are sustained not by the court system, but by the value of the ongoing relationship.

Questions:
Under what circumstances are supply contracts renegotiated? How does the potential for renegotiation affect contract design, investment and deployment of assets in a supply chain?

How, fundamentally, does repeated interaction change how firms in a supply chain behave? What progress can analytical models make in deepening our understanding of this phenomenon?

Readings:
Big Stake in Small Errors, *New York Times*, Aug 17, 2001.

OEMS Walking Away From Contracts -- AMD Sues Alcatel As Suppliers Feel Full Force Of Inventory Wave, *Electronics Buyers News*, Apr 9, 2001, p 1.