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Bargaining Chains

Issues of efficiency and the distribution of profits along a decentralized supply chain are major themes in modern operations management research. The majority of current papers in this area adopt some sort of leadership model (for example, a "leader" firm declares a price and the "follower" firm then chooses a quantity) of firm interactions. Leadership models come in various popular guises (e.g. Stackelberg games, principal-agent models) and enjoy some analytical advantages, but little face validity for many real business-to-business negotiations. Bargaining models offer more realistic representations of actual b-to-b negotiations, and an edge in laboratory validation as well, yet are rarely invoked in the supply chain literature. This is due, in part, to the lack of a generally accepted solution concept for all but the simplest bargaining situations. This paper proposes a solution for bargaining chains with multiple competing firms in each tier, defends it with appeals to standard and well-accepted solution concepts in the bargaining literature and the theory of cooperative games, and then uses it to revisit the efficiency and distribution questions central to the supply chain literature.