Bargaining in Supply Chains

Stephen Leider and William S. Lovejoy

We study experimentally bargaining in a multiple-tier supply chain with horizontal competition and sequential bargaining between tiers. Our treatments vary the cost difference between firms in tiers 1 and 2, with larger cost differences reflecting increased bargaining power. We measure how these underlying costs influence the efficiency, negotiated prices and profit distribution across the supply chain, and the extent to which these outcomes are influenced by personal characteristics such as risk aversion, altruism, selfishness, inequity aversion and social welfare concerns. Additionally, we study the dynamics of the bargaining offers and the chat messages sent during bargaining. We find that Retailer profits are hurt by decreased competition in either the Manufacturer or the Supplier tier. Additionally, Manufacturers and Suppliers benefit by decreased competition in their tier, while Manufacturers are hurt by decreased competition in the Supplier tier. Additionally, we find that the Balanced Principal model of supply chain bargaining does a good job explaining our data, and significantly out performs the common assumption of unilateral bargaining power. We find that the structural issue of cost differentials dominates personal characteristics in explaining outcomes. Finally, we find that while offers may initially start far apart, they quickly converge so that subjects are bargaining over a relatively small share of the surplus. Extreme initial offers, however, do significantly affect final outcomes.