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# Price and Margin Negotiations in Marketing Channels: An Experimental Study of Sequential Bargaining Under One-sided Uncertainty and Opportunity Cost of Delay

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## Abstract

Manufacturers and distributors in marketing channels commonly establish prices, margins, and other trade terms through negotiations. These negotiations have significant impact on channel members' profit streams over the duration of the business relationship. We consider a situation where a manufacturer and an exclusive, independent distributor are negotiating the transfer (wholesale) price of a new product. The transfer price should lie between the manufacturer's production cost and the maximum resale price that the distributor can charge end consumers (consumers' reservation price). We assume that the negotiations occur in an incomplete and asymmetric information environment such that the manufacturer is uncertain about the consumers' reservation price, whereas the distributor knows it precisely because of proximity to the consumer. The negotiation is time-sensitive because of the threat of potential competitive entry. Both parties have identical opportunity costs of delay in reaching agreement.

In this incomplete and asymmetric information environment, the negotiators must learn before they can reach agreement. However, each negotiator has an incentive to convince the other that the available surplus is smaller than it really is. Hence, a high (low) offer (counteroffer) has little credibility without opportunity costs of delay. For any given manufacturer offer, a distributor facing a low consumer reservation price has a small available surplus and therefore more incentive to delay agreement than if the price is high. Willingness to delay agreement and incur delay costs lends credibility to the price signal in an offer (counteroffer), providing a means for communicating credibly and facilitating agreement. Thus, with incomplete, asymmetric information and opportunity costs of delay, a signaling formulation with alternating offers and counteroffers captures key strategic characteristics of marketing channel negotiations.

We adapt a game-theoretic model (Grossman and Perry 1986a, 1986b) to predict bargaining behavior and outcomes in this channel negotiation scenario. We derive both point predictions and directional implications from this sequential equilibrium (SE) bargaining model regarding how manufacturer uncertainty about distributor value (consumers' reservation price), opportunity cost of delay, and the actual reservation price (total surplus) should influence bargaining outcomes. The predictions are tested in two experiments. The point predictions serve as

benchmarks against which we evaluate the observed bargaining outcomes, as we focus on testing the model's directional implications. We also explore the underlying bargaining process to assess the extent to which subjects conform to the SE signaling rationale in optimizing channel profits.

Both experiments show that the point predictions of the SE model fall considerably short in describing bargaining behavior and outcomes. The players bargained suboptimally, took longer to agree, and could not extract the total available surplus. Nevertheless, the data are consistent with several directional predictions of the SE model. There is consistent support for the predicted directional effects of manufacturer uncertainty and consumer reservation prices. As expected, high uncertainty impeded efficient negotiation, eliciting high first offers from manufacturers and increasing bargaining duration. Also, higher reservation prices (higher surplus) lowered bargaining duration, increased bargaining efficiency, and raised profits for both parties. However, support for the predicted directional effects of opportunity cost of delay is mixed. Higher delay costs produced quicker agreements, but distributors did not benefit from their informational advantage.

Although the directional results suggest that the SE model is a good representation of bargaining behavior, a closer analysis shows that the bargaining process data did not correspond to the specific signaling rationale of the SE model. Rather, these data suggest that the bargainers created simplified representations of the price negotiation and used heuristics to develop their offers and counteroffers. We observe two systematic patterns of deviations from the SE model. Some manufacturers may have used the counteroffer levels to infer the distributors' competitive stance and factored this into their responses. Thus, even though the distributor counteroffers carried signals of the consumer reservation price, the manufacturers delayed agreement because they either did not recognize the signal or thought it was unreliable. In other cases, the data are consistent with a simple, non-strategic model (EMP) in which the manufacturer and the distributor divide the monetary payoff (surplus) equally. The results show that the effectiveness of signaling mechanisms depends not only on the economic characteristics of the bargaining situation, but also on shared individual and social contexts that influence how signals are transmitted and interpreted.

*(Distribution Channels; Margin Negotiation; Sequential Bargaining; Behavioral Game Theory; Experimental Economics)*