The Internet and e-commerce holds much promise for supply chain management. Smoother flows of information and reduced communication and search costs are reasons why supply chains may operate more efficiently and profitably using new technology and new intermediaries. As researchers we would like to understand the benefits from employing new technology and participating in new exchanges. What an individual firm gains from these new market structures depends, of course, as much on the power it wields as on the total surplus created. That is, in evaluating a firm’s incentive to participate in a new market structure, one must understand both how the pie is divided as well as how the pie expanded.

This chapter explores alternative means of slicing the pie. We examine different ways researchers have modeled channel power, i.e., the ability to dictate supply chain outcomes and claim supply chain profits. In doing this, we draw from the economics and marketing literature as well as the supply-chain contracting literature. Among the methods considered are altering the order of play, manipulating opportunity costs, changing the competitive environment, and bargaining models. For each modeling technique, we explain the relevant mechanics, discuss its implications, and discuss papers that have employed the approach.

Key words: Supply chain power; bargaining; supply chain contracting.

I Introduction

This section will motivate the importance of modeling how participants split any gains that result from improved supply-chain performance.

II Altering the order of play

Much of the work in the supply-chain contracting literature has assumed a Stackelberg set up: One player is a priori deemed to be the leader and gets to propose the terms of trade as a take-it-or-leave-it offer. The leader consequently holds the majority of channel power since she can propose a contract that maximizes her profit subject to gaining her trading partner’s acceptance. An obvious way of manipulating power in the channel is then to reverse the order of play, letting the follower lead. While heavy-handed, this technique has the advantage of analytical simplicity and occasionally yields some interesting results.

Relevant papers:


III Manipulating opportunity costs

An alternative approach to manipulating the order of play is to vary the outside opportunities open to players. The leader is still dictates the terms of trade but now the follower’s participation constraint plays an important role. The follower’s lone decision (with regard to the contract) is to accept or reject the leader’s offer, but acceptance now requires a higher return. Increasing his opportunity cost – essentially making his outside option more attractive – allows him to demand a greater share of supply chain profits credibly. The opportunity cost then becomes a proxy for the follower’s power. This approach allows for finer gradations of power than merely reversing the order of play.

Relevant papers:


IV Changing the competitive environment

A frequently heard claim for online exchanges is that buyers will benefit by having multiple suppliers compete for their business. Increasing the number of sellers would seem an appealing way of modeling a shift in supply chain power. There are number of considerations when implementing such a model. For example, one could consider merely increasing the number of market participants. The exact change outcome would depend on market details. For example, do participants compete in price or quantity? Do they post prices or do they compete in an auction.

A different, relevant approach is to keep the number of suppliers fixed but lower the buyer’s search cost. A large number of suppliers does not guarantee the buyer a low price if it is costly and time consuming to determine the best possible price. Consequently, the buyer becomes more powerful as his cost of searching for the best possible deal falls.

Relevant papers:


V Bargaining models

Finally, we consider formal models of bargaining, beginning with a review of the assumptions that underlie economic bargaining models. We then consider applications in supply chain and channel management.

Relevant papers:


VI Conclusion