Optimal Supply Chain Contracts under Asymmetric Information

Ernst-Ludwig von Thadden, University of Mannheim

Abstract

A central problem in vertical relationships is to coordinate the mismatch between supply and demand. This paper studies a problem of contracting between a manufacturer and a retailer who privately observes the retail demand materialized after the contracting stage. Under very general assumptions, we show that the optimal contract can be implemented by either a wholesale contract or a buyback contract, depending on the retailer's ex-ante liquidity constraint and ex-post bargaining power. In a buy- back contract, the manufacturer requests an upfront payment from the retailer and buys back the unsold inventories with possibly nonlinear buyback price. Since return shipments are inefficient, retail supply and price will be lower than the first-best level. The optimal contracts are robust to several scenarios including multiple retailers.

Keywords: Retail contracts, return policies, buyback contracts, incentive problems, limited liability.