Shipping the good apples with strategic competition and asymmetric information

Abstract

A model of Cournot oligopolists competing in two markets of different degrees of asymmetric information regarding product quality is presented. Specifically, each firm produces a product of which a fraction is a “dud” (or a “reject” or “seconds”) that has no value (as modeled in Creane and Jeitschko’s (European Economic Review, 2016) model of perfect competition). This is in contrast to the common modeling of a fraction of firms being low quality producers. In one market, quality is observable and in the other is not. For example, one market may be a country with weak institutions where quality claims are not verifiable while the other is a developed market whose institutional structure guarantees the quality claim. As another example, there may be parallel markets, one with and one without certification. As a result, a firm that produces a product for the market with observable quality will send the byproduct rejects to the unobservable quality market, thereby lowering average quality there. However, as is standard in the Cournot model, outputs are observed and consumers can update beliefs based on this, which a non-competitive firm must take into account in its production decision. In this sense, this is a model of “shipping the good apples” with strategic competition when there is asymmetric information.

As an application, this structure is applied to Brander and Krugmans classic and well-understood model of reciprocal dumping. There are two countries and two firms, one located in each country. One country being unable to verify quality (weak intuition) and the other able to. Because only high quality can be exported to the foreign country and so the duds remain in the home country, even with constant marginal cost of production the markets are no longer treated as segmented as in Brander in Krugman. Beginning with the case of trade from the weak country (home) to the strong country (foreign), as compared to autarky, the home firm increases total production but can only export its high quality product (non-duds) increasing the number of duds on the home market. As a result, average quality in the home country decreases as the rejects make up a greater proportion of the home product. Despite this, home consumer surplus could increase as the increase output on the home market also decreases the home price and if the latter effect dominates, consumer surplus can increase. Specifically, the latter effect dominates when the foreign demand is greater and home dud rate is not too much greater than the foreign one. On the other hand, if foreign autarky price is close enough the home autarkic price, then by opening to trade country welfare decreases as the loss in consumer surplus can be sufficiently great (i.e., the decrease in home consumer surplus from trade is greater than the gain in home producer surplus). Interestingly, this can occur even if the home autarkic price is greater than the foreign one.