

Transaction Costs in the Trading of Variable Quality Commodities

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November 20, 2018

Abstract

We study the organization of markets when goods are heterogeneous and contracting is not viable. Buyers presented with a batch of non-uniform goods sold at the same price will spend resources inspecting in order to get the best ones (i.e. cherry-picking). This cost to the buyer does not result in a transfer to the seller: it is dissipating. Sellers can avoid it by selecting the units for the buyers, but this requires trust: clearly sellers would benefit by getting rid of the worst units and improving the remaining selection, so buyers who receive a low quality specimen do not know whether they have been cheated or unlucky. In the absence of trust, sellers can induce random choosing by making inspection costs high enough. However, in many cases, preventing individual inspection will make the whole batch harder to evaluate, and ends up preventing trade. When allowed to inspect, buyers with lower costs of inspection will drive the ones with higher costs away, which reduces the surplus. We develop a model for this situation and obtain several theoretical results which are then contrasted with common practices in retail trade. We prove that 1. If the buyers are allowed to inspect, the good must be sold at a price above average value. 2. As a result, the quality distribution will decay over time, and the seller will be forced to lower the price. 3. The problem is more acute when there is greater dispersion in quality. 4. The seller is induced to make individual inspection costly, but he must keep the inspection cost of the whole batch low. 5. There are large gains to be made by increasing uniformity. 6. When buyers differ from each other, the ones with lower cost of inspecting could drive away the ones with higher inspection cost. When this problem is serious enough, the market for the commodity may not exist.

The results in this paper help explain a wide variety of observed phenomena in various markets. Among them: why are oranges displayed in a pyramid, why pre-selected (pre-packaged) fruit is cheaper, why supermarkets with a heterogeneous customer base tend to sell either very uniform produce or pre-bagged produce, why there is a "second hand" vegetable market, and why so much effort is made to make produce homogeneous.