

Product Quality and Market Organization: Two Theoretical Perspectives

Transaction cost economics (TCE) offers one perspective on the relationship between market organization and product quality. TCE views organizational arrangements mainly as a means of reducing transaction costs, which include costs of drafting, negotiating, safeguarding an agreement, and haggling and monitoring costs after the agreement has been made. One class of transaction costs are measurement, or information, costs (Hallwood, 1990; Hobbs, 1996).² These include costs of searching for information about buyers or sellers in the market, inspecting goods prior to purchase, and assigning a price. Measuring costs may be especially significant when transactions are heterogeneous (e.g., vary in premiums placed on quality characteristics across transactions and over time), or characterized by asymmetric information (Lafontaine and Masten, 2002; Williamson, 1985). Two types of asymmetric information can be distinguished. The seller may have more information than the buyer about a difficult-to-measure quality attribute, or an individual's contribution to the quality outcome cannot be determined by measuring the finished product (i.e., team organization). Markets may be organized to reduce measuring costs that are associated with assuring a closer correspondence between product value and price, or actions and rewards (Barzel, 1982; Williamson, 1985).

Measuring difficulties associated with overcoming asymmetric quality information may also be viewed as an "exchange hazard" (Williamson, 2000; Poppo and Zenger, 2002). When hog quality attributes are difficult to measure the producer may engage in opportunistic behavior to exploit private information by failing to perform as agreed, such as shirking or cutting corners on quality, also referred to as *moral hazard*. This is expected to lead to contracts with added security features to mitigate the hazard, such as provisions for third party monitoring of sellers, documents to justify activities performed, and other means of increasing information disclosure.

TCE distinguishes transactions primarily by the degree of asset specificity, which refers to investments that have considerably less value in alternative uses and by alternative users. To the extent that addressing quality issues involves such transaction-specific investments, incentives are created to hold up the investing party (e.g., haggling, making false claims of nonperformance, withholding information to create a breach of contract) to gain more favorable terms during contract formation or execution (Masten, 1996). Failure to concede will significantly reduce the value of the specialized assets. As asset specificity increases, more complex contracts are crafted with added protections by specifying required actions, conditions of breach, penalties to deter breach, and procedures such as arbitration for resolving unforeseen disputes (Williamson, 2000; Poppo and Zenger, 2002).

In situations where asset specificity and the associated threat of holdup is especially significant, the costs of protecting against this threat also rise. Examples of the costs would be resources devoted to writing and enforcing contracts. Consequently, vertical integration will become the cheapest

² As defined by Barzel, "measurement is the quantification of information."

alternative. Vertical integration is the ownership of successive vertical stages by a single firm that transfers goods internally. Ownership limits the likelihood of holdup by essentially eliminating the other party.

TCE also gives an important role to uncertainty and the influence of organizational arrangements in facilitating adaptations to changing circumstances (Masten, 1996; Ryall and Sampson, 2003). Matching producers' hogs to the quality needs of packers may require continual revision in light of changing customer demands and quality standards. As market uncertainty increases, it becomes more costly to write enforceable, complete contracts that detail behavior contingent on future outcomes. This leaves opportunities for parties to engage in opportunistic behavior to avoid compliance or increases the likelihood that parties will fail to optimally adapt to changing conditions. Consequently, contracts are likely to become more "relational" in nature. That is, rather than laying out detailed terms of cooperation, contracts are likely to specify the process by which terms will be established. By making contract terms less explicit, transaction costs associated with renegotiating and revising contract terms are reduced in light of uncertain future demand and quality needs.

Another branch of the industrial organization literature, *agency theory*, attempts to determine the optimal contract in a principal/agent relationship, where the principal is the controlling authority and the agent acts for the principal (Eisenhardt, 1985, 1989). Broadly speaking, cooperative behavior between the principal (packer) and agent (hog producer) is viewed as a contracting problem between self-interested individuals with different goals and risk preferences.

In cases where the packer is unaware of how the producer has behaved, two options are available to limit moral hazard (Eisenhardt, 1989). First, contracts may reward producers based, at least partially, on outcomes of their behavior (*outcome-oriented contract*). Second, the packer may invest in information about producer behavior (*behavior-oriented contract*).

The optimal performance evaluation strategy (behavior-oriented versus outcome-oriented) will depend on the ability to measure quality outcomes and related inputs. When quality outcomes are difficult to measure or difficult to measure in a reasonable amount of time, behavior-oriented contracts will become more attractive. Behavior-oriented contracts are also more likely if producer activities can be easily defined and evaluated, which makes it easier to specify appropriate producer behavior in advance. In this case, the production process is referred to as highly *task programmable* (Eisenhardt, 1989).

How can producers be motivated to act in the social interest when they are involved in several valuable activities that affect multiple quality attributes, but the ability to measure these attributes varies? Holmstrom and Milgrom (1991) address this question by formally extending the standard linear principal/agent model to include multiple activities that compete for the agent's time and attention. They demonstrate that explicit incentives for easily measured outcomes of producer effort will be reduced or absent when other unmeasurable performance outcomes are also important. This is because compensation based solely on a measurable outcome, such as volume

supplied, may lead to poor performance in an unmeasurable outcome, such as some dimension of pork quality. Similarly, explicit incentives for a producer's contribution to an easily assessed activity would lead the producer to neglect any team production activities. The presence of incentive clauses for easily measured quality attributes will, therefore, be influenced by the ability to monitor producer activities that affect the unmeasurable attributes.