Strategic transfer pricing, absorption costing, and observability

Robert F. Göx*

This paper analyses the use of transfer pricing as a strategic device in divisionalized firms facing duopolistic price competition. When transfer prices are observable, both firms' headquarters will charge a transfer price above the marginal cost of the intermediate product to induce their marketing managers to behave as softer competitors in the final product market. When transfer prices are not observable, strategic transfer pricing is not an equilibrium and the optimal transfer price equals the marginal cost of the intermediate product. As a strategic alternative, however, the firms can signal the use of transfer prices above marginal cost to their competitors by a publicly observable commitment to an absorption costing system. The paper identifies conditions under which the choice of absorption costing is a dominant strategy equilibrium.

© 2000 Academic Press

Key words: transfer pricing; absorption costing; product pricing.

1. Introduction

A common problem for vertically integrated firms is the coordination of activities among divisions in order to achieve an efficient allocation of resources within the organization. This task typically involves the determination of transfer prices for those goods and services that are exchanged at the divisional level. According to Hirshleifer (1956) the transfer pricing problem is solved by setting the transfer price equal to the marginal cost of the intermediate product. Although this well-known result seems widely accepted from a theoretical point of view, there is sufficient empirical evidence that firms are frequently using full cost-based transfer prices instead.[1] This study offers a theoretical explanation for the existing gap between accounting theory and company

[1] See e.g. Kaplan and Atkinson (1998, p. 454), and Horngren *et al.* (1994, p. 872).

practice by providing a model of two competing hierarchies that gives rise to a strict preference for full cost-based transfer prices. In particular, the basic model considers two divisionalized firms facing price competition on the final product market. In this setting the optimal transfer price does not equal marginal cost because its main function is to serve as a commitment device *vis-á-vis* the competitor. Namely, by charging transfer prices above marginal cost of the intermediate product both firms can commit their marketing managers to behave as softer competitors on the final product market. Accordingly, the resulting equilibrium profits strictly exceed the profits attainable under marginal cost-based transfer pricing.

To understand the intuition behind this result, consider the usual incentive structure in divisionalized firms when the firms' headquarters delegate the responsibility of pricing decisions to divisional managers and evaluate the agents' performance by their divisional profits. Since the transfer prices are exogenous parameters of the agents' profit maximization problems, the firms' headquarters can commit their managers to the desired pricing strategies by adjusting the transfer prices accordingly. Moreover, since both firms have an incentive to raise their transfer prices strategically, there exists a unique non-cooperative equilibrium in which both firms charge transfer prices above the marginal cost of the intermediate product. Conversely, centralized firm could not credibly commit themselves to the agents' equilibrium strategies because the marginal cost of the intermediate goods are exogenous parameters of the firms' decision problems. In other words, choosing the managers' equilibrium strategy would not be a profit-maximizing strategy for centralized firms. Also, the firms could not simply replace strategic transfer pricing by mandating final product market prices because announcing a price schedule different from the profit-maximizing prices of the centralized firm would not be an equilibrium.[2] One may, however, consider secret pricing agreements between the firms as an alternative collusion device. However, since cartel contracts are illegal and tacit collusion usually provides incentives to cheat, owner-managed firms will generally be confined to act as non-cooperative players in the pricing game on the final product market.[3] Thus, strategic transfer pricing also implies a strict preference for the delegation of competencies to managers over centralized decision-making, whereas both alternatives would lead to equivalent outcomes in the classical Hirshleifer setting.

The basic concept of strategic transfer pricing has, however, one fundamental weakness that also applies to most of the models reviewed in the next section. As pointed out by Katz (1991) and Bagwell (1995), unobservable contracts cannot serve as credible precommitments unless they are employed for other than strategic reasons. This observation limits the direct use of strategic transfer pricing to the case of observable transfer prices. Although it may be reasonable to assume that the firms in a small industry do know their competitor's transfer prices, it seems promising to identify strategic alternatives when the transfer prices are not common knowledge because establishing transfer prices above marginal cost would be beneficial for both firms. In the last part of this paper it is demonstrated that a publicly observable commitment to an absorption costing system may create the desired managerial incentives because

---

[2] A formal proof for this claim is given in Proposition 2 on page 335.

[3] See Jaquemin and Slade (1989, p. 417). In a multiperiod setting, firms may also be able to carry out irreversible investments to create credible precommitments (Brander and Spencer, 1983). However, these may be too costly to carry out and hence incredible, see Tirole (1988, chapter 8) for a review of related literature.