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Information technology, organizational design, and transfer pricing ☆

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Abstract

We show how information technology affects transfer pricing. With coarse information technology, negotiated transfer pricing has an informational advantage: managers agree to prices that approximate the firm's cost of internal trade more precisely than cost-based transfer prices. With sufficiently rapid offers, this advantage outweighs opportunity costs of managers' bargaining time, and negotiated transfer pricing generates higher profits than the cost-based method. However, as information technology improves, the informational advantage diminishes; the opportunity costs of managers' bargaining eventually dominate, and cost-based methods generate higher profits. Our results explain why firms generally prefer cost-based methods, and when negotiated methods are preferable.

JEL classification: C72; D82; L23; M41

Keywords: Cost-based transfer pricing; Negotiated transfer pricing; Bargaining; Decentralization

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1. Introduction

In the absence of competitive markets for internally traded products and services, why do some firms base transfer prices on internal costs and others allow managers to negotiate prices?[1] Allowing managers to bargain over transfer prices has several drawbacks: the time that managers spend bargaining is lost to other productive activities; if negotiations take too long, the firm may miss some market opportunities; and if haggling leads to ill-will between managers, the firm may suffer from sub-optimal decisions and conflict (see Brickley, et al., 2004; Kaplan and Atkinson, 1998; Simons, 2000). Faced with these issues, why do firms ever let managers bargain over transfer prices? And what economic characteristics predict the preferred pricing method?

In any large firm, local managers have private information—superior knowledge of local conditions, business processes, and potential cash flows. Other parties in the firm rely on local managers' reports, but there are two important problems with this. First, a local manager may distort information; if truthful reports are desired, top management must provide appropriate incentives. Second, transferring local knowledge may be costly—it may be difficult or impossible for the local manager to fully describe the precise links between local information, the multitude of local decisions, all of the available alternatives, and the potential cash flows. And it may be difficult or impossible for other parties in the firm to quickly understand and act upon the local manager's reports. We show that it is the ability to communicate knowledge to top managers and others that is a key factor determining the preferred transfer-pricing method. Specifically, the more difficult it is to transfer the local knowledge of the supplying division, the more attractive is negotiated pricing.

The costs of transferring local knowledge to top managers and others vary widely across divisions, across firms, and over time. A number of factors influence these costs: the nature and complexity of local knowledge; the cultural, educational, and on-the-job training backgrounds of divisional and top managers; the necessity for rapid responses to changes in local conditions; the firm's size; the technology for communicating local information; and the geographic reach of the firm (Brickley, et al., 2004; Christie, et al., 2003; Demsetz, 1988; Jensen and Meckling, 1992).

We use the term "coarse information-technology (IT)" to refer to the limitations of the firm's formal and informal information systems when transferring local divisional knowledge to top managers.[2] There is a continuum: in the extreme "perfect-IT" case, it is possible for the local manager to quickly and costlessly report on everything of local economic relevance (top managers must still provide truth-telling incentives if they desire truthful reports); at the other extreme, the local manager cannot provide any relevant reports whatsoever (reporting incentives are then not an issue). Of course, neither extreme is realistic: all firms rely on divisional reports, yet no reporting technology fully communicates everything about local conditions.

[1] A survey reports 73% of managers think it important to price internal transfers to maximize operating performance (Ernst and Young, 1999). Negotiated and cost-based methods are common in practice (Atkinson, 1987; Price Waterhouse, 1984; Tang, 1993). Hirshleifer (1956), Edlin and Reichelstein (1995), Baldenius, et al. (1999), and Vaysman (1996, 1998) analytically establish the contracting benefits of transfer pricing in various economic environments.

[2] Jensen and Meckling (1992) describe this continuum as "general" vs. "specific" knowledge. Demsetz (1988) and Christie, et al. (2003) use the terms "nonspecialized" and "specialized" knowledge.