Journal of Economic Behavior and Organization 150 (2018) 149–161

Contents lists available at ScienceDirect

Journal of Economic Behavior and Organization

journal homepage: www.elsevier.com/locate/jebo

Managerial delegation under capacity commitment: A tale of two sources

Stefano Colombo[a,*], Marcella Scrimitore[b]

[a] Università Cattolica del Sacro Cuore, Largo A. Gemelli 1, Milano I-20123, Italy
[b] Università del Salento, Ecotekne, via per Monteroni, Lecce I-73100, Italy

ARTICLE INFO

Article history:
Received 26 October 2017
Revised 20 March 2018
Accepted 26 March 2018

JEL codes:
D43
L11
L21

Keywords:
Duopoly
Outsourcing
Capacity commitment
Strategic delegation

ABSTRACT

The paper discusses the role of delegation to managers in a duopoly in which the optimal decisions upon in-house production and outsourcing may lead make *and* buy to coexist, namely bi-sourcing to arise at equilibrium. In the benchmark framework of quantity competition, outsourcing to an inefficient external manufacturing is shown to be strategically used under bi-sourcing with the aim to exploit market advantages induced by delegation. Strategic reasons for adopting either outsourcing or in-house production, besides leading firm's profits to increase in the cost of internal or external production, let delegation not be the optimal (unique) endogenous choice, which contrasts with previous studies. It may also cause, under sufficiently high product differentiation, a reversal of the advantage of the delegating (first-mover) firm over the non-delegating (second-mover) rival.

© 2018 Elsevier B.V. All rights reserved.

1. Introduction

The crucial role that outsourcing strategies play in sustaining business success has been widely investigated in the economic literature. In particular, the literature addressing the standard make-or-buy problem identifies a substitutability relationship between firm internal and external sourcing of key inputs (Coase, 1937; Williamson, 1975). Recently, some works have provided arguments suggesting the existence of a complementarity relationship between the two sources, which have lead the *make-and-buy* concept to arise. By procuring the same input both through purchases from outside suppliers and in-house production, firms are said to engage in bi-sourcing. This concept is getting quite popular in the world of business nowadays. For instance, Nokia combines in-house production of components with the purchase of inputs from a wide network of electronic components (Shy and Stenbacka, 2003), whereas Mattel "made most of its own die-casting molds at a facility in Malaysia, but also outsourced them to firms in Hong Kong" (Johnson, 2007). As argued by Carey and Frangos (2005), US airlines usually adopt bi-sourcing, in the sense that half of overhaul work is done by internal resources, whereas the remaining part is done by external resources. Similarly, Sony both manufacturers display panels (in-house production) and procures display panels from external suppliers (e.g. AU Optronics) (outsourcing), thus engaging in bi-sourcing (Lin et al., 2016). Other examples of bi-sourcing firms are Du Punt and GMS (Beladi and Mukherjee, 2012).

[*] Corresponding author.
E-mail addresses: stefano.colombo@unicatt.it (S. Colombo), marcella.scrimitore@unisalento.it (M. Scrimitore).

https://doi.org/10.1016/j.jebo.2018.03.024
0167-2681/© 2018 Elsevier B.V. All rights reserved.

While the analysis of make-or-buy decisions within the economic literature has focused on both cost and strategic advantages of outsourcing when it fully crowds-out the internal input production (see, e.g., Kopel et al., 2016; Chen et al., 2011; Buehler and Haucap, 2006; Shy and Stenbacka, 2003; Arya et al., 2008a and 2008b; Lu et al., 2014; Jain and Hazra, 2017), a more recent and still scant literature on bi-sourcing has discussed the reasons that lead outsourcing to coexist with in-house production.[1] In Du et al. (2006, 2009) and Stenbacka and Tombak (2012) bi-sourcing is shown to achieve the optimal balance between cost savings of outsourcing and firm bargaining power in bilateral negotiations with external suppliers. The preference for combining make *and* buy over exclusive internal or exclusive external input production has been also demonstrated by Spencer and Raubitschek (1996) in an international scenario in which the optimality of buying inputs from abroad rivals *and* making inputs internally is determined by price reductions of inputs caused by higher competition in the input market. Further literature focuses on bi-sourcing as a strategy adopted to mitigate the problem of capacity utilization (He and Nickerson, 2006), to reduce demand uncertainty (Emons, 1996) and to exploit the complementarity between in-house R&D and external know-how (Cassiman and Veugelers, 2006).[2]

A new rationale for bi-sourcing has been recently provided by Beladi and Mukherjee (2012) in a Cournot duopoly in which the profit-maximizing firms commit to in-house production at a pre-play stage, while they compete downstream choosing the optimal input levels to outsource. In a framework in which external manufacturing is assumed to be more efficient than the internal one, the role of market power at the upstream stage of competition between suppliers is shown to be crucial in causing bi-sourcing. Indeed, the incentive to reduce the outside over-cost input prices creates a strategic effect pushing toward in-house production, the latter being combined with the more efficient outsourcing, thus determining the optimality of bi-sourcing.[3]

In the present paper we introduce managerial delegation in the framework of Beladi and Mukherjee (2012), without assuming any *a priori* cost advantage of external or internal production. According to the literature of strategic delegation, and in the vein of Fershtman (1985) and Fershtman and Judd (1987),[4] we assume that profit-maximizing owners delegate discretion over outsourcing decisions to revenue-interested managers. In such a context, we aim at investigating the implications of delegation on firms' incentives toward bi-sourcing. In particular, we explore the circumstances under which firms' owners, by strategically allowing their managers to twist away from profit-maximization, affect firm aggressiveness on the product market and the optimal balance between the strategic/cost advantages from committing to internal capacity and those brought by outsourcing.

The above analysis is carried out by solving a Cournot duopoly game in which, at the first stage, each profit-maximizing owner decides upon the optimal capacity and, after observing the input prices set at the second stage by the external suppliers, chooses at the third stage the optimal degree of discretion to assign to revenue-interested managers. According to such a delegation scheme, managers compete at the last stage of the game by selecting the output produced in outsourcing, thus determining the optimal extent of bi-sourcing.[5,6] The model is further developed to capture the competitive forces driving the endogenous choice of delegation: it is made by firms at a pre-play stage of an extended game in which symmetric delegation and symmetric no-delegation represent two possible outcomes, respectively recovering the above described managerial model and the Beladi and Mukherjee's model.[7] The likelihood of bi-sourcing and the outcome of the extended game of delegation are also investigated under product differentiation. The paper, finally, provides some insights on the results obtained from running the model under price competition.

The results achieved in the benchmark framework of quantity competition point out the circumstances in which bi-sourcing occurs under delegation. Such circumstances depend on how the strategic gains associated with either in-house production or outsourcing trade-off in equilibrium with the cost advantage of adopting the alternative source, leading the two sources to be combined for final output production. Indeed, we find that: *a*) in-house production can coexist with more efficient outsourcing, since the latter strategically allows firms to reduce the external input prices; *b*) outsourcing can coexist with more efficient in-house production, due to the incentive to strategically exploit downstream market advantages

[1] The question on whether single or multiple external sourcing is the optimal procurement strategy also attracts considerable interest among researchers (see, e.g., Burke et al., 2007, Inderst, 2008, Puranam et al., 2013).

[2] See Krzeminska (2009) for a survey on the determinants and the management of *make-and-buy*. See also Parmigiani (2007), who surveys both economics and management theories, explaining why firms adopt concurrent sourcing.

[3] Beladi and Mukherjee (2012) examine the incentives toward bi-sourcing by, first, assuming a monopoly both downstream and upstream, and then, introducing, competition at least at one stage, finding that both higher upstream and downstream competition affect bi-sourcing, reducing its extent in equilibrium.

[4] See also Vickers (1985) and Sklivas (1987) for other seminal works in this literature. For further extensions of the basic models in oligopoly theory see González-Maestre (2000), Saracho (2002), Ziss (2001), Berr (2011), and Scrimitore (2013). Contributions to business and management literature include Bhardwaj (2001), Bhardwaj and Balasubramanian (2005) and Kremic et al. (2006), while the most recent survey by Sengul et al. (2012) integrates strategic delegation theory into strategy and management research. Finally, see the work by Kräkel (2004) and Dai and Chao (2016) combining strategic delegation with agency theory.

[5] We assume that all variables are simultaneously chosen by the decision-makers at each stage of the game.

[6] The choices upon internal capacity and outsourcing can be conceived as long-run and short-run firms' decisions respectively, with the former made by owners and the latter delegated to managers. The idea that owners keep long-run decisions to themselves and delegate short-run decisions is also found in Barcena-Ruiz and Casado-Izaga (2005) and Mitrokostas and Petrakis (2014) in a strategic delegation context, with reference respectively to differentiation strategies and R&D investments. Moreover, this idea is consistent with the empirical evidence brought up by Colombo and Delmastro (2004).

[7] The distinction between delegating and non-delegating firms mirrors the difference between profit-maximizing and revenue-maximizing behavior, i.e., owner-managed and managerial firms.

Download English Version:

https://daneshyari.com/en/article/7242521

Download Persian Version:

https://daneshyari.com/article/7242521

Daneshyari.com