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Choosing multiple offshoring strategies: Determinants and complementarity



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ABSTRACT

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In contrast to the existing offshoring literature that typically views foreign outsourcing and integration as alternative strategies, the simultaneous use of these two offshoring strategies by multinational firms becomes common practice in many countries. In this paper, we employ bivariate choice models to investigate firm-level decision-making on foreign outsourcing and insourcing strategies. Analyzing Korean firm-level data, we find a possible complementarity between the two strategies and that a firm's choice of multiple sourcing strategies is related to its expected gains from increased bargaining power, reduced price risk in purchasing inputs, and costs saved in the production process. Furthermore, our empirical results reveal distinctive roles of various firm-specific characteristics in determining the two foreign sourcing strategies adopted by Korean manufacturing firms. *J. Japanese Int. Economies* **34** (2014) 42–57. Department of Economics, Sogang University, Seoul 121-742, Republic of Korea.

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1. Introduction

Multinational firms organize their production processes through either purchasing inputs from foreign suppliers (i.e., outsourcing), or procuring inputs from their foreign affiliates (i.e., insourcing). As global sourcing strategies of multinational firms have become more developed and complicated these days, there is a growing tendency of firms utilizing more than one sourcing strategy at the same time, so-called multiple sourcing. For instance, Defever and Toubal (2007), using a dataset of French multinational firms in 1999, found approximately 13% of their transactions done through multiple offshoring strategies. Similar evidence is observed in other countries such as Spain (Kohler and Smolka, 2009) and Japan (Ito et al., 2011). Despite the fact that the adoption of multiple sourcing strategies seems to have become common practice within the contemporary global economy, the offshoring literature treats the strategies of ‘making’ versus ‘buying’ inputs as being mutually exclusive.²

Hence, what explanation can be offered for the observed fact of the simultaneous usage of foreign outsourcing and insourcing? In the international trade literature, multiple sourcing strategies have been distinguished from one another, depending upon the sources of complementarity. The first kind of multiple sourcing is ‘bi-sourcing’ or ‘second sourcing,’ which entails the simultaneous use of both outsourcing and foreign direct investment (FDI) to procure the *same* input.³ In other words, a firm may choose both insourcing and outsourcing strategies to reduce the costs associated with its weak bargaining power or with uncertainty in input markets. The second multiple-sourcing strategy mentioned in the literature is ‘hetero-sourcing’ or ‘hybrid sourcing.’⁴ Unlike the bi-sourcing strategy, the cost advantage of hetero-sourcing may arise when a firm uses different sourcing methods in order to procure *different* inputs. Thus, if firms anticipate possible gains from such a complementarity related to either one of the above-mentioned strategies, their choices of foreign outsourcing and insourcing should be understood as being interlinked rather than separable.

Hence, in contrast to previous empirical studies, we allow firms to choose either a single sourcing strategy or multiple sourcing strategies in our empirical model. For this purpose, we employ a bivariate probit model, which enables us to estimate the inter-relationship between foreign outsourcing and foreign insourcing. Using a novel Korean firm-level data, we first seek to determine the possible existence of complementarity between the two offshoring strategies. Furthermore, we examine various firm- and industry-level characteristics that may influence a firm’s decision to choose either a single or multiple sourcing strategies.

Two of our findings are noteworthy. First, we find a possible complementary relationship between a firm’s foreign outsourcing and foreign insourcing strategies.⁵ The finding supports results from studies focusing on both ‘bi-sourcing’ and ‘hetero-sourcing’ motives such as Du et al. (2009), Jabbour and Kneller (2010), Schwarz and Suedekum (2010), and Antràs and Chor (2013). That implies that it may be more profitable for firms to conduct the two types of offshoring strategies simultaneously when they face the unpredictable condition of input markets and complex manufacturing technologies.

Second, we find that two firm-specific characteristics of both capital and information and communications technology (ICT) intensities have distinctive roles in determining which of the two foreign sourcing strategies is adopted. Specifically, labor-intensive firms are more likely to choose a foreign outsourcing strategy, whereas ICT-intensive firms are more likely to choose a foreign insourcing strategy.⁶ However, the finding on ICT needs to be interpreted with caution. This finding may be rather related to the characteristics of e-business system in the Survey of Structure Business Activity, our main database for firms’ activities.

² Since Antràs (2003) developed a model whereby a firm’s heterogeneity can explain choices between international outsourcing versus insourcing, this hypothesis has been tested and confirmed by various studies such as Yeaple (2006) and Nunn and Treffer (2008) using US industry-level datasets; and Tomiura et al. (2011) using Japanese firm-level dataset.

³ See Choi and Davidson (2004), Du et al. (2009), and Jabbour and Kneller (2010).

⁴ See Schwarz and Suedekum (2010) and Antràs and Chor (2013) for theoretical models of hetero-sourcing.

⁵ Cassiman and Veugelers (2006) study a similar example of complementarity between make-and-buy decisions for internal R&D and external knowledge acquisition.

⁶ However, this finding may be specific to Korean multinational firms in a sense that the results are not symmetrical. It is still an open question whether there is other country case where higher capital intensity (which is linked to foreign insourcing) and a lower ICT intensity (i.e., preferring foreign outsourcing) matter for firms with multiple sourcing strategies.

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