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Agglomeration, opportunism, and the organization of production

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Abstract

Recent economic analysis of outsourcing has emphasized its international dimension. In contrast, this paper focuses on local outsourcing. The paper specifies and solves a model where the organization of production (vertically integrated or not) and the location of production (agglomerated or not) are jointly determined. The paper shows that agglomeration reduces opportunism, a thick market effect, and so serves as a substitute for integration. This force will lead firms to agglomerate. The paper also shows that the normative properties of equilibrium with local outsourcing are not as clear cut as for international outsourcing. Since local agglomeration is achieved at the cost of congestion, local markets may be too thick, which would not be the case for an increase in the thickness of a world market. Finally, the many changes in economic and social circumstance that have been labeled "globalization" do not impact only vertically integrated firms. They also impact cities and industry clusters to the extent that agglomeration is a substitute for vertical integration.

Keywords: Agglomeration; Vertical integration; Transactions costs; Opportunism

1. Introduction

Some of the best papers on outsourcing begin with discussions of Barbie dolls (Feenstra [14], Grossman–Helpman [19]). Barbie's contribution to the understanding of outsourcing is as follows: the doll is produced using plastic and hair from Taiwan and Japan and assembled

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in Indonesia and Malaysia. The molds are made in the US. Barbie is clothed by Chinese, and decorated in the US. In sum, Barbie is a small plastic icon of international outsourcing. There are many other examples of outsourcing that are not much different from Barbie, including cars. The bottom line of all this is that outsourcing has an important international dimension. In fact, the term "outsourcing" has been used as a synonym for internal vertical disintegration.[1] While it is undeniable that the international outsourcing of inputs is a phenomenon of crucial importance, it is not true that outsourcing is inherently global. There are many instances where local outsourcing of inputs is extensive. A particularly striking instance is business services. Schwartz [37] makes a compelling case that firms disproportionately purchase business services from within their own city. Looking at central city companies and across all services, 48.3% of service outsourcing was within a city. This proportion is much larger for some services: legal counsel (72.5%), major bank (54.2%), business insurance brokerage (60.9%), and auditing (79.1%). Looking at demanders in New York, Los Angeles, Chicago, and San Francisco, the figures are larger: all services (65.2%), legal counsel (87.0%), major bank (75.0%), insurance brokerage (74.4%), and auditing (86.9%) (Schwartz [37, p. 293]). The figures are slightly lower but still high for companies located in the suburbs: all services (49.5%), legal counsel (69.3%), major bank (52.2%), business insurance brokerage (54.3%), and auditing (70.7%) (Schwartz [37, p. 293]). Historical evidence of local outsourcing can be found in Chapman and Ashton [4], who show that there exists a positive relationship between agglomeration and disintegrated production in the British cotton textile industry. More recent evidence can be found in Scott [35,36], who considers the Los Angeles garment, printed circuit, and jewelry industries.

Outsourcing has been a topic of interest in several different areas of economics. The urban economic analysis of outsourcing begins with Marshall [28]. His treatment is technological: when there are scale economies in the provision of nontradable intermediate inputs, there is an increasing return associated with spatial agglomeration. In this literature, Goldstein and Gronberg [18] focus on cost complementarities and input sharing, while Helsley and Strange [23] show that input sharing in a probabilistic sense facilitates innovation. Duranton and Puga [12] present a model where a new product requires a different kind of input sharing than does a mature product.

Outsourcing is also considered in the literature on the theory of the firm. Coase [5] is seminal. This is a large literature and we will not attempt to review it here. See Williamson [39], Holmstrom and Tirole [26], and Hart [21] for surveys. The heart of the literature is the determination of the boundary of a firm. The transactions cost theory of the firm holds that opportunism and relationship specific investment are central to this determination. Opportunism arises when contracts are incomplete. In this case, it may be possible for one party to an ongoing relationship to "hold-up" the other for favorable terms. The possibility of this hold-up leads to an inefficiently low level of relationship specific investment. This in turn encourages vertical integration, since hold-up is less likely to occur when both parties to a relationship are part of a single firm. One kind of investment that is in peril of hold-up is site-specific investment. For example, when the costs of moving inputs are large, an investment in input production is useful only to nearby demanders. Joskow [27] shows that site-specificity leads to the vertical integration of co-located coal-burning electricity generating plants and coal mines. Although this suggests that transactions costs in general and opportunism in particular may be important forces leading to agglomeration, nearly all work on the economics of agglomeration is in the spirit of Marshall's technological microfoun-

[1] Feenstra and Hanson [15, p. 240]: "… outsourcing, by which we mean the import of intermediate inputs by domestic firms."