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Offshoring, globalization, and welfare

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ABSTRACT

We investigate the issue of offshoring in a general-equilibrium model of two countries and one sector of increasing returns to scale. Our model uncovers that offshoring occurs and endogenously evolves in a bell-shaped pattern when trade costs decline, explaining some stylized facts in developed countries. Furthermore, this simple framework can be applied to examine the welfare issue. We find that a fall in offshoring costs benefits the high-wage country but hurts the low-wage country. On the other hand, the low-wage country benefits with trade liberalization. The impact of falling trade costs on the welfare of the high-wage country depends on the values of offshoring freeness.

1. Introduction

This paper analyzes endogenous offshoring and the impact of globalization on welfare. As a distinct facet of globalization, revolutionary progress in information and communication technologies (ICT) has greatly promoted the development of offshoring. In order to take advantage of the technology differential, factor endowments, or factor prices across countries, a growing number of firms have chosen to break down their production processes into stages and tasks, which are performed in several

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disparate countries or regions. Offshoring, or international fragmentation, refers to such a relocation of jobs and processes to a foreign country.

Firms in high-wage countries offshore their tasks to low-wage countries to benefit from the relatively lower labor cost. Feenstra and Hanson (1999) state that offshoring can explain between 11% and 15% of the observed decline in the cost share of production labor in US manufacturing between 1979 and 1990. On the other hand, empirical studies indicate that offshoring leads to higher wages in developing countries (Arne, Dick, & Farzana, 2012; Khalifa & Mengova, 2010). For instance, Li, Li, Wu, and Xiong (2012) show that the average salary of Chinese urban workers increased 0.1% per year from 1978 through 1997. However, this growth rate increased to 13.8% from 1998 through 2010.

In recent years, a new phenomenon has attracted the attention of economists and policy makers. Onshoring, reshoring, or backshoring: these terms describe a phenomenon that brings US manufacturing jobs back from places such as China, where low-cost advantages are quickly diminishing. According to a new survey by the Boston Consulting Group (BCG) (2013), the share of executives who are planning to "reshore" or are considering it rose to 54%, as compared with 37% of executives who responded to a similar BCG survey in February 2012. When asked whether they expect to move production in light of rising wages in China, 21% of respondents said they are "actively doing this" or that they "will move production to the USA in the next two years." The BCG press release reports that labor costs are one of the major driving forces in decisions about production location. There is a need to better understand how the movement of offshoring and onshoring can be endogenously determined and associated with the changing wage differential in the process of globalization along with the possible economic impact on the welfare of various groups of workers. These are precisely the issues this article attempts to clarify.

Grossman and Rossi-Hansberg (2008) analyze the impact of offshoring on factor prices in a neoclassical framework. They uncover the productivity effect of offshoring and show that this effect is analogous to factor-augmenting technological change. Baldwin and Robert-Nicoud (2014) integrate the theoretical trade-in-tasks literature with the standard trade-in-goods theory. They argue that if one views offshoring as "shadow migration" and uses shadow-migration adjusted endowments instead of actual endowments, the H–O trade and production predictions work perfectly. However, within a neoclassical framework of trade theory, the impact of offshoring on wages and welfare is ambiguous because it depends on whether offshoring takes place in a labor-intensive or capital-intensive sector (Jones & Kierzkowski, 2001). Therefore, we believe that imperfect competition and positive trade costs are important features that must be included when we analyze the behavior of firms engaged in offshoring and trade. Fortunately, the New Trade Theory (NTT) built in recent decades (see Baldwin, Forslid, Martin, Ottaviano, & Robert-Nicoud, 2003; Fujita, Krugman, & Venables, 1999) can be applied to incorporate those important features in a general equilibrium framework.

While most NTT papers focus on the impact of falling trade costs, it is noteworthy that the development of new ICT is another feature of globalization that should be taken into account in order to better understand the evolution of international trade. This sort of effort is already observed in the existing literature. For example, Fujita and Thisse (2006) adopt a modeling strategy that combines production fragmentation and ICT improvement. They show how economic integration triggers the relocation of plants into the periphery. They also find that ICT improvement benefits residents in the periphery but hurts workers in the core. Robert-Nicoud (2008) studies the effect of offshoring on the stability of economic agglomeration in the developed economy. His results suggest that the efficiency benefits generated by offshoring are shared by workers worldwide. From the perspective of the developed countries, he argues that offshoring helps sustain and reinforce employment in the source country.

In contrast to Fujita and Thisse (2006) and Robert-Nicoud (2008) in which scale economies are internal to the firm, Grossman and Rossi-Hansberg (2012) develop a theory of task trade between similar countries with external economies of scale. Countries differ in size, and firms produce differentiated goods by performing a continuum of tasks that generate local spillovers. They find that there always exists an equilibrium in which the larger country has higher wages and output. This result confirms the home market effect (HME) in terms of wages (Krugman, 1980).

In this article, we study the issue of offshoring in a general-equilibrium model setting with positive transport costs of final goods and endogenous wage differentials. In Fujita and Thisse (2006) and Robert-Nicoud (2008), the wage differentials are exogenously given or equalized by employing a