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The offshoring threat and wage negotiations: Theory and evidence

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ABSTRACT

This study examines the existence of the offshoring threat on wage rate using plant-level data. To do so, we construct a simple version of the traditional collective wage-bargaining model to consider the offshoring threat. Based on theoretical predictions of the threat effect, we examine evidence of the offshoring threat using plant-level data from South Korea and the endogenous switching regression model. The estimated results in our empirical study strongly suggest that the offshoring threat may exist.

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1. Introduction

The globalization of firms' activity, the acceleration of firms' offshoring, and the integration of global markets are remarkable phenomena that have arisen in the international economy over the past several decades, and the economic impacts of these activities on the labor market have naturally become a major focus of research for both international and labor economists. Most previous studies of the impact of offshoring on labor have focused mainly on wage level, job creation/destruction, and wage inequality. Among these issues, the influence of offshoring on wage level has been the most traditional and controversial within this area of research, and it also forms the subject of this study.

Many researchers have argued that an increase in offshoring activities by firms may augment wage levels both at home and in the host countries. This argument is based on several rationales, such as the high productivity of offshoring firms, technology spillover, and changes in the relative labor demand. As previous studies such as Helpman et al. (2004) and Helpman (2006) have suggested, the level of productivity of offshoring firms is likely to

be higher than that of non-offshoring firms. Hence, an increase in offshoring within an industry may increase productivity and wage levels in that industry. Offshoring by firms from developed countries may also entail technology transfer and spillover in the host country, which can act as a driving force for increasing wage levels in the host country. Furthermore, if firms offshore in a vertical fashion, their production processes are fragmented internationally through offshoring. If the international fragmentation of firms depends on the relative abundance of factor endowments, the offshoring of labor-intensive production activities may increase the relative labor demand in the host country and raise wage levels. Thus, many empirical studies support the positive impact of offshoring on wage levels (Aitken et al., 1996; Glewwe, 2000; Lipsey and Sjoholm, 2004, 2006; Brown et al., 2004).

However, there are also contrary views on the effect of offshoring on wage level, and these focus on what is known as the "sweatshop" motivation for offshoring. According to the "sweatshop" argument, offshoring firms and multinationals may exert strong monopsonistic market power over the local labor market, and the mobility of production activities across countries can become a strong bargaining chip in the wage-setting process. Thus, offshoring can reduce wage levels at home and in the host country (Brown et al., 2004). Moreover, the "sweatshop"

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motivation for offshoring can lead to undesirable effects, such as child labor, unfair wage contracts, and poor working conditions in the host country. The "sweatshop" argument is asserted mainly by social activities and international institutions, with some economists providing theoretical support for it. The relevance of the "sweatshop" motivation for offshoring is, however, still controversial, and some researchers insist that the "sweatshop" motivation for offshoring may be only a small or negligible part of a firm's decision to offshore (see Brown et al., 2004 and Mcmillian, 2010 for a literature review).

Although the "sweatshop" argument focuses mainly on the negative impact of offshoring on the host country, the mobility of firms' production activities can also influence the labor market in the home country in a similar way to "sweatshop" behavior. The option to offshore may provide employers with a good alternative, that is, foreign production, during the wage negotiation process in the home country. Hence, firms that have the option to offshore can reduce the settled wages at home by announcing the possibility of offshoring in the event of wage-negotiation failure. The potential threat of offshoring or plant-moving has been widely discussed (e.g., Freeman, 1995; Rodrik, 1997; Uchitelle, 2000; Burke and Epstein, 2001, 2007). Many researchers have adopted the offshoring threat to study various topics, such as the strategic choices of foreign production locations (e.g., Zhao, 1995; Naylor and Santoni, 2003), wage rates and employment levels (e.g., Mezzetti and Dinopoulos, 1991; Zhao, 1998, 2001; Rodrik, 1999; Choi, 2001), union activities (e.g., Bronfenbrenner, 2000, 2001),[1] labor productivity (Seguino, 2007), and wage inequality (Kwon, 2011). Although the offshoring threat on the labor market has been much discussed, there is a lack of empirical evidence of the offshoring threat, with the exception of Choi (2001). Choi estimates the wage premium equation using US industry-level data and finds the union wage premium to be negatively affected by the stock of FDI outflow. From his estimated results, Choi argues that outward FDI may reduce the union wage premium through the effect of the offshoring threat. Although his finding strongly suggests that the FDI (or offshoring) threat might exist, his study also has limitations in supporting the existence of the offshoring threat in several aspects. First, he estimates the union wage premium at the industry level, not the firm level; thus, the result does not pin down the firm-level offshoring threat. Furthermore, although he controls relative labor demand and other industry factors in his estimation equation, it is difficult to interpret the impact of outward FDI as being the only influence of the offshoring threat. Hence, as Choi indicates, his study only finds the "implicit" effect of the offshoring threat.

Therefore, this study examines the existence of the offshoring threat using plant-level data. Following previous theoretical studies, such as Rodrik (1999) and Kwon (2011), we construct a simple version of the traditional collective wage-bargaining model (McDonald and Solow, 1981) to consider the offshoring threat.[2] Based on the theoretical predictions, we examine the evidence of the offshoring threat using plant-level data from South Korea and the endogenous switching regression model.

The rest of this paper is organized as follows. Section 2 presents a theoretical model to examine the locational choices of firms for the production process, allowing for the threat effect and its theoretical implications. Section 3 provides empirical evidence of the offshoring threat on wage using plant-level data, and Section 4 offers a summary.

2. Theoretical background of the threat effect

2.1. Simple theoretical model

In this section, we develop a simple theoretical model based on the Rodrik model, which captures the plant-moving threat through wage negotiations (Rodrik, 1999; Kwon, 2011), in order to analyze the plant-moving threat by potential offshoring firms.

Assume that a representative consumer in home country H consumes a variety of differentiated products Θ and has a standard CES preference. Therefore, the demand function for a variety $\theta \in \Theta$ in country H is represented by the following standard CES demand function:

$$x_\theta = A p_\theta^{-\varepsilon}, \varepsilon > 1,$$

where $A > 0, \varepsilon$ is the elasticity of the demand, and Θ is the set of product varieties.

Turning to the production side, consider that firm i located in country H is producing a variety $\theta_i \in \Theta$. Assume that the firm can produce one unit of final goods using $1/\varphi_i$ units of labor only and has monopolistic power over its variety market. Note that $\varphi_i > 0$ is the labor productivity of firm i. Given the CES preference and the production technology of firm i, the firm's monopolistic profit and output are:

$$\pi(w_i; \Gamma_i) = \frac{A^{\varepsilon-1}}{\varepsilon} \left(\frac{\varepsilon-1}{\varepsilon}\right)^{\varepsilon-1} \left(\frac{\varphi_i}{w_i}\right)^{\varepsilon-1} - F_i$$
$$= A^{\varepsilon-1} \Psi(\varphi_i) \left(\frac{1}{w_i}\right)^{\varepsilon-1} - F_i; \quad (1)$$

$$x(w_i; \Gamma_i) = A \left(\frac{\varepsilon-1}{\varepsilon}\right)^\varepsilon \left(\frac{\varphi_i}{w_i}\right)^\varepsilon, \quad (2)$$

where F_i is the fixed-cost structure of firm i, and w_i is the wage rate paid by firm i. For notational simplicity, $\Psi(\varphi_i) \equiv (1/\varepsilon)[\varphi_i(\varepsilon-1)/\varepsilon]^{\varepsilon-1}$. Assume that operating a firm entails a certain non-negative fixed cost $B_i \geq 0$, regardless of the location of production.

Given its preference and technology, assume that firm i plays the following three-stage game, which includes wage negotiations between the firm and a representative of the workers:

1. Wage Bargaining: Firm i that is producing in domestic production facilities bargains over the wage rate with the representative of the domestic workers. If the wage negotiation succeeds, then the firm remains and produces at home. However, if the wage negotiation fails, the firm can consider offshoring to a selected foreign country.
2. Locational Choice: When the wage negotiation fails, the firm chooses either offshoring or shutting down, depending on the profitability of offshoring. If offshoring is profitable, then firm i offshores with a positive fixed cost E_i. In particular, assume that in the case of offshoring, the firm auctions off the location of an affiliate among possible host countries, considering the offered wage rates of the potential host countries, and the wage rate of offshoring is the lowest (competitive) foreign wage rate, $\overline{w}_F$. However, if offshoring is not profitable, then the firm shuts down and exits the market. Meanwhile, domestic workers can be hired by other competitive sectors and earn competitive wage rates in the case of wage negotiation failure.