



Offshoring, wages, and heterogeneity



Sung-min Kim^a, Jin-tae Hwang^{b,*}

^a Kyungpook National University, 80 Daehak-ro, Buk-gu, Daegu 41566, Republic of Korea

^b Daegu University, 201 Daegudae-ro, Gyeongsan, Gyeongsangbuk-do 38453, Republic of Korea

ARTICLE INFO

Article history:

Received 30 November 2014

Received in revised form 18 March 2016

Accepted 3 April 2016

Available online 6 April 2016

JEL Classification:

F16

J23

J31

Keywords:

Material offshoring

Service offshoring

Skill groups

Heterogeneity

Labor market outcomes

ABSTRACT

Considering heterogeneous responses by skill group to material and service offshoring, we examine the relationship between offshoring and the individual wages of workers in the U.S. labor market. We find that offshoring has been beneficial for high-skill workers but detrimental for middle- and low-skill workers. In particular, service offshoring, which has been widespread since 2000, has severely affected the labor market, compared to material offshoring.

© 2016 Elsevier B.V. All rights reserved.

1. Introduction

In recent decades, the rapid advances in information and communication technologies (ICT) have enabled U.S. firms to offshore various service inputs to which the tasks related otherwise would have been performed by in-house workers. Consequently, domestic firms' business activities that had primarily focused on outsourcing material inputs by shifting some production processes to developing countries have been extended to offshoring service inputs. The domestic firms' participation in service offshoring has created a new wave of globalization and has become a common pattern in international trade.

The concept of offshoring consists of the division of labor with specialization. A striking feature of the recent offshoring is to shift some activities required in production processes across national borders and subsequently to affect the skill demand in the activity-related occupations. Mass job destructions can arise in the occupations relevant to the activities or tasks relocated to foreign countries. At the same time, however, it increases the skill demand for some other occupations. The immanent characteristics of offshoring that affect the skill structure for a source country's labor

market have raised strong public concern about and sometimes opposition to such rapid increases in offshoring intermediate inputs. Therefore, one of the most controversial issues in international trade is the extent to which the recent surge in offshoring has affected and will continue to affect the U.S. labor market.

In the past, the literature on international trade has addressed offshoring problems with material inputs. Although material offshoring continues to matter in international trade, since the recession of 2001, a number of U.S. firms have increased their productivity by engaging in service offshoring (Amiti and Wei, 2005; Levine, 2012). The advances in ICT have facilitated the high-quality, low cost, high-speed transmission of voice and data communications, which in turn has helped U.S. firms cut down the geographical distance in trade across firms or countries and thereby overcome the impediment to international trade (Levine, 2012).

It is widely accepted that many high-paying and secure, white-collar jobs have become increasingly threatened by the increased trade in service activities, together with rapid technological changes and the resulting changes in firms' business activities (Amiti and Wei, 2005; Crino, 2010a). Crino (2010a) shows that the skill-biased property of service offshoring increases the demand for the occupations requiring high-skilled workers, while decreasing the demand for those requiring unskilled workers. The author

* Corresponding author.

E-mail addresses: java0215@gmail.com (S.-m. Kim), jhwang@daegu.ac.kr (J.-t. Hwang).

also stresses that the tradability of service offshoring is crucial to determining the skill demand, even in the same level of skill class. Moreover, [Crino \(2010b\)](#) finds that offshoring had negative effects on U.S. post-displacement wages over the 1990s, and argues that government intervention programs to support workers against negative trade shocks in the labor market should be expanded to compensate for the income loss arising from offshoring during the initial period after reemployment as well as an unemployment period.

In the literature, a few studies have addressed how service offshoring affects wages, although most examined employment and offshorability. [Geishecker and Gorg \(2013\)](#) argue that changes in the equilibrium wage and quantity of labor resulting from offshoring need to be considered together. The authors examine the relationship between offshoring and wages in the United Kingdom and explain how wage inequality has changed. More specifically, using panel data from the British Household Panel Survey, they suggest that service offshoring has negatively affected the real wages of low- and medium-skilled workers, while benefiting high-skilled workers with increased real wages. Analyzing the Danish labor market, [Hummels et al. \(2011\)](#) also show that offshoring increases high-skill wages, but decreases low-skill wages. However, they focus on the effects of offshoring by skill type and task characteristics only, not the impacts of service offshoring itself.

In this context, we examine the effects of offshoring service inputs on the wages of skill-group workers in the U.S. labor market, as well as offshoring material inputs. To do so, we include offshoring and skill group variables as explanatory variables in our regression models of wages. For the skill group, we consider both occupations and educational attainments. The inclusion of occupational skill groups can be more relevant than any simple schooling variables like educational attainments frequently used in previous studies because both service and material offshoring can more directly affect the skill demand for individual occupations, according to the characteristics of occupational offshorability.¹ Given that service offshoring closely involves the feature of occupations as shown in [Crino \(2010a\)](#), the use of educational attainments only cannot precisely examine the relationship between service offshoring and skill group wages. Moreover, we compare the magnitude of the impacts of material and service offshoring on skill group wages.

This paper is organized as follows. Section 2 introduces the data sources and variables for the empirical analyses. Then we present empirical specification and regression results in Section 3. Section 4 concludes.

2. Data and variables

To examine the relationship between offshoring and wages, we collect data from Integrated Public Use Microdata Series Current Population Survey (IPUMS CPS), EU KLEMS, and the World Input-Output Database (WIOD).² The dataset used here includes their demographic characteristics, economic activities (e.g., hourly wage, 11 occupations, and 29 industries), and academic

background over the period 1995–2007. It also includes variables involving the U.S. imports and ICT by industry.

2.1. Occupations and educational attainments

In this paper, we adopt two types of the skill group for analysis, based on occupations and educational attainments.

To group occupations by skill, on the one hand, [Gregory et al. \(2001\)](#) and [Hijzen et al. \(2005\)](#) relied on the occupational structure of employment in the Standard Occupation Classification (SOC). They categorize into three occupational skill groups nine major occupational groups ranked in terms of training, skill and experience, and qualifications in the SOC. Building on the mean hourly wage in real terms, we acquire high-, middle-, and low-skilled occupation groups by reclassifying 11 occupational categories in IPUMS CPS, which are not identical to those by the authors.³ To do this, we refer to the SOC used by [Gregory et al. \(2001\)](#) and [Hijzen et al. \(2005\)](#). By doing so, managers and administrators can be, for instance, classified into the high-skilled occupation group. In addition, associated professional and technical occupations can be regarded as the middle-skilled, while plant and machine occupations, as the low-skilled.

On the other hand, [Crino \(2010a\)](#) considers an average of schooling required to do one's tasks. More specifically, the author defines "occupations requiring more than a bachelor's degree (larger than 16) as the high-skilled occupation group, those requiring an associate degree in college as the medium-skilled, and those requiring lower degrees of schooling as the low-skilled." Following [Crino's \(2010a\)](#) classifications for the skill groups by educational attainment, we also define high-, middle-, and low-skill groups by those with a bachelor's degree or more, less than 16 years of schooling, and less than 12 years of schooling, respectively.

The log real mean hourly wages for all industries, manufacturing industry, and service industry are shown by occupation and educational attainment in [Fig. 1](#). The upper three subfigures correspond to occupational skill groups, while the lower three subfigures correspond to educational attainments. The log hourly wages in each subfigure are all adjusted to zero in the base year of 1995. The overall series patterns for occupational groups and educational attainments in all industries are similar to each other. In particular, the two time-series patterns of high-skill hourly wages appear to be quite similar. But those of the middle- and low-skill groups look somewhat different between the two types of skill groups; the middle-skill group wage series for occupations looks a little more volatile than that for educational attainments. This shows, on the other hand, that compared to 1995, the hourly wages of the high-skill group for occupations and educational attainments increased by 0.225 and 0.220 log points in 2007, respectively. Those of the middle-skill groups for occupations and educational attainments only increased by 0.137 and 0.115 log points, while those of the low-skill groups increased by 0.096 and 0.063 log points, respectively.

There have been few striking increases in the hourly wages of the middle- and low-skill groups classified by either occupation or educational attainment since 2002. However, the hourly wage series of the middle-skill group differ somewhat between these two classifications over the period 1995–2000. For occupations, the middle-skill group appears to have been in a slump during the same period, and it was more severe in the service industry than in the manufacturing industry, while we cannot find such a slump in the middle-skill group for educational attainments. On the other hand, compared to 1995, there are slightly greater wage gaps in

¹ As described below, this paper's argument is clearly different from [Geishecker and Gorg \(2013\)](#) in terms of not reporting the estimation results on occupational skill groups, as they find no statistically significant effects of service offshoring on the wages of occupationally high-skilled workers, in spite of their findings on the existence of wage gaps among occupational skill groups.

² EU KLEMS refers to a commission, funded by the European Commission, which does industry level, growth and productivity research projects. KLEMS is an abbreviation for capital (K), labor (L), energy (E), materials (M) and service (S) inputs.

³ See [Appendix A](#) for the 11 occupational categories.

Download English Version:

<https://daneshyari.com/en/article/5086128>

Download Persian Version:

<https://daneshyari.com/article/5086128>

[Daneshyari.com](https://daneshyari.com)