

Academic Frontier of Globalization of IT-service industry: A Review from International and Spatial Economics Perspective

Soichiro Takagi^{1*} Hideyuki Tanaka²

1. Introduction

Pervasive use of Information and Communication Technology (ICT) has changed business ways in many industries. Especially, ICT has played the role to rebuild organizational networks by connecting value chain and by providing communication network with drastically lower cost. At the same time, ICT has also made certain types of services tradable, which used to be non-tradable and had to be produced at the same location of consumption.

For example, “IT-services” such as software development, software R&D, system operation, can be performed in distant locations as long as they are connected to communication networks. And “IT-Enabled Services (ITES)”, such as call-center operation, data entry, financial processing also became possible to be performed in distant locations by using ICTs. As a result, value chain of many types of services has been fragmented and transferred across borders. In this paper, IT-service and ITES trade are together called as “IT-services” trade.

The globalization of those services has been the topic of economic policy because of its potential effect on economy both in developed and developing economies. For example, the effect on employment and innovative capacity has been discussed in developed economies. On the other hand, how to build the capacity of the industry and to promote export has been the topic in developing economies. Analysis on those topics from international economics is the essential part to understand the phenomenon.

This study reviews prior studies on globalization of IT-services industry from international economics, and clarifies academic frontier on this field specifically focusing on the impact on wage and employment in developed economies.

2. Literatures on IT-services trade

Many empirical studies have been conducted to assess the effect of outsourcing in manufacturing sector. Since early 1980s, there has been increasing wage gap between skilled and

¹ Student, Graduate School of Interdisciplinary Information Studies, The University of Tokyo

² Graduate School of Interdisciplinary Information Studies, The University of Tokyo

*Corresponding author. Email: qq096511@iii.u-tokyo.ac.jp

unskilled labor in the U.S. and many other countries. Outsourcing has been analyzed to assess its impact on this change in wage and employment. For example, Feenstra and Hanson (1997) show that relative demand of skilled labor increased both in developed and developing countries by production sharing. Feenstra and Hanson (2003) empirically assess whether technological change or trade of intermediate input has affected wage gap between skilled and unskilled labor, and concluded that both of outsourcing and expenditure on computers and other high-tech capital are explanation of the shift towards nonproduction labor in the U.S. However, empirical results of the impact on wage and employment have not been consistent. Prior studies such as Anderton and Brenton (1999), Arndt (1998), Berman et al. (1994), Harrison and McMillan (2007), Kravis and Lipsey (1988) obtain different result depending on the specifications. Other approach on the outsourcing is on the determinants of outsourcing and the choice between foreign direct investment and outsourcing such as Hanson et al. (2003), Bartel et al. (2005), Chen et al. (2008), Grossman and Helpman (2002).

On IT-services trade, because of its possibility of widespread application in many service occupations, public concerns have been centered in its impact on wage and employment. However, prior studies on the impact of IT-services trade are limited. Among them, Liu and Trefler (2008) assess impact of outsourcing to China and India on U.S. employment, while Amiti and Wei (2005) assess UK employment and service outsourcing and Falk and Wolfmayr (2008) conduct similar research on EU countries. In this paper, these three works are discussed as the representative research in this field. Ebenstein et al. (2009) also empirically study IT-services trade. Besides the effect on wage and employment, Amiti and Wei (2009) study productivity and IT-services trade.

3. Impact on wage and employment of IT-services trade

Three representative works on the impact of IT-services trade on wage and employment in developed countries are reviewed in depth. The first is Liu and Trefler (2008), which deals with the impact of outsourcing to China and India on the U.S. employment. The second is Amiti and Wei (2005), which analyzes the effect of service outsourcing on UK employment. The third is Falk and Wolfmayr (2008), which assesses the effect of outsourcing to low-wage countries on employment on five EU countries³

Table 1 shows the summary of methodology of the representative works. Among three works, only Liu and Trefler (2008) uses individual basis data with multiple models, which are probit

³ Austria, Finland, Germany, Italy and the Netherlands

analysis on job switching, and regression analysis on unemployment and earnings. They include ‘inshoring’ from the two countries, which refers to service export from U.S. to low-wage countries. Both of Amiti and Wei (2005) and Falk and Wolfmayr (2008) use industry basis data and labor demand framework, which uses total employment as dependent variable.

Table1. Summary of methodology

Authors	Country	Model	Explanatory variables	Data source
Liu and Trefler (2008)	U.S.	Probit of job switching, Regression on unemployment and earnings	<ul style="list-style-type: none"> - Service outsourcing to China and India - Inshoring from China and India - Worker characteristics 	CPS data and BEA data on international service transactions 1996-2006
Amity and Wei (2005)	UK	Labor demand	<ul style="list-style-type: none"> - Service outsourcing intensity - Material outsourcing intensity - Wage - Output 	IMF balance of payments statistics yearbook and input/output tables 1995-2001
Falk and Wolfmayr (2008)	Five EU countries	Labor demand	<ul style="list-style-type: none"> - Service outsourcing - Material outsourcing - Value added - Wage 	OECD STAN database and input/output tables (Eurostat) 1995/2000

Liu and Trefler (2008) show that offshore outsourcing increases the chance of job switching and inshoring affects conversely. They argue that the effect is much larger in export and net effect is reducing the chance of job switching. In terms of unemployment, they showed that inshoring and offshoring had very small effect on unemployment. However, generally offshore outsourcing increases, and inshoring reduces weeks of unemployment. The net effect is positive and reduce unemployed period. Authors also assess the effect on earnings and shows that import of services reduces, and export increases earnings. The net effect is zero or positive on earnings. They emphasized that the effect of service trade is very small and the net effect is positive with the consideration of inshoring. This argument is to answer to the concerns that service trade is reducing the job in the U.S., and the discussion on whether the government should restrict service trade. However, all of the analysis variation shows that import have the effect of more job switching, more unemployment and less earnings. In other words, developed country needs sufficient export to offset the negative effect of service outsourcing to maintain the current industrial structure.

Amiti and Wei (2005) estimated the effect on manufacturing and service sector separately. The result is service outsourcing has no negative effect on employment in manufacturing sector. On the other hand, service outsourcing has negative effect on employment in service sector. However, the authors state that the analysis on service sector is not robust because of the inconsistent result across specifications and relatively limited number of cases.

Falk and Wolfmayr (2008) shows that in manufacturing sector, import of services from both low-wage and high-wage countries has no significant effect on employment. Instead, they find materials import has negative impact on employment. In service sector, import from low-wage countries has significant and negative effect on employment. As the authors point out, this result is consistent with Amiti and Wei (2005) which suggests service outsourcing has negative effect on employment in service sector. They analyze purchased services from low-wage and high-wage countries separately, and find that import from low-wage countries and domestic employment are substitutes, and import from high-wage countries has no effect on domestic employment.

4. Conclusion

This paper analyzes the prior studies on the globalization of IT-service industry, focusing on the effect of service outsourcing on employment in developed countries. Due to the limitation of data availability, this study field is still in early stage. Continuous research is required to assess the effect in national economy in short term and to discuss the change of industrial structure in the long term.

Selected References

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