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研究課題名（和文） 海外直接投資と国際生産分業及び中国の情報通信産業輸出

研究課題名（英文） FDI, Production Fragmentation and the ICT exports of China

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研究成果の概要：

In this research, I analyzed China's ICT exports to Japan and the US, the two largest markets. It shows that China has been the largest ICT exporter to both Japan and the US. In addition, the research suggests that the growth of China's ICT exports has yet crowded out the ICT output of other Asian countries. FDI and production fragmentation may be the major reasons for the rapid growth of China's ICT exports.

In addition, the research used a theoretical model to analyze how the technology progress of a large developing country like China, would affect the welfare of advanced country in an open economy. The exogenous technology growth due to FDI inflows/trade will affect the welfare of the advanced trading partner negatively. The result is more general than Samuelson (2004).

交付額

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|         | 直接経費      | 間接経費    | 合計        |
|---------|-----------|---------|-----------|
| 2007 年度 | 1,900,000 | 570,000 | 2,470,000 |
| 2008 年度 | 1,300,000 | 390,000 | 1,690,000 |
| 年度      |           |         |           |
| 年度      |           |         |           |
| 年度      |           |         |           |
| 総計      | 3,200,000 | 960,000 | 4,160,000 |

研究分野：応用経済学

科研費の分科・細目：経済学・応用経済学

キーワード：ICT、FDI、Exports、China

## 1. 研究開始当初の背景

An OECD (2006) study on the global trade of information and communication

technology (ICT) shows that, China exported \$180 billion ICT products in 2004,

exceeding Japan, the European Union and the US, and becoming the number one exporter of ICT products in the world. Back to 1996, China's ITC exports were negligible. ICT are not labor intensive products but high tech goods. As a developing country, in theory China is not supposed to have comparative advantage in producing high tech goods. What are the major reasons for China having been emerged as the number one ITC exporter? How does the fact affect the welfare of the world economy as well as the welfare of China's trading partners? The statistics published by China's ministry of commerce shows that 87 percent of China's high tech exports was produced by foreign invested firms in China. It suggests that FDI is the major factor driving the rapid growth of China's ICT exports in the last decade.

## 2. 研究の目的

In the last decade, international fragmentation of production associated with FDI/outsourcing has been the focus of a growing economic literature. The idea that production occurs internationally has been included in various models of international trade (Deardorff, 2001). More recently, models of foreign outsourcing have been formalized in firms decisions to delocalize parts of their production activities abroad (Grossman and Helpman, 2002). Various issues on international fragmentation of production have been investigated (Ardnt and Kierzkowski, 2001).

However, the existing literature mainly

emphasizes economic rationales of engaging on production fragmentation and the benefits of MNEs. It ignores the impact of production fragmentation by FDI/outsourcing on the host countries. Specifically, the literature fails to analyze to what extent the comparative advantage of host countries have been improved, how the trade pattern/balance will be affected, what the welfare impact for the country (such as China) which is the target of production fragmentation and for the country (such as the USA) which is the market of the products produced with international production fragmentation.

Samuelson (2004) used a simple numerical example to show that free trade could make the USA worse off if its trading partner-China improved their productivity in the sector where China does not have comparative advantage. However, Samuelson does not provide the source of productivity improvement. As a matter of fact, FDI/outsourcing is the source for the rapid improvement of productivity in China's ICT industry.

## 3. 研究の方法

The research methods consist of empirical and theoretical approaches.

Empirical analyzing the export growth of China's information communication technology (ICT) products in two major markets Japan and the US from 1992 to 2004 and using an econometric model to investigate whether the rapid growth of Chinese ICT exports crowded out that of other Asian countries: Indonesia,

Malaysia, Philippines, Singapore, South Korea and Thailand.

Theoretical approach: Using the standard Ricardian model, we developed the numerical result of Samuelson (2004) with general conditions.

#### 4. 研究成果

##### (1) 中国の情報通信技術の輸出とそのアジア諸国への影響

この論文は、日本とアメリカという2つの主要市場における1992年から2004年にかけての、中国の情報通信技術（ICT）製品の輸出成長について分析している。この分析は、上記期間において、中国のICT輸出が年率2桁成長を続けていることを示している。2004年までに、中国は日本とアメリカに対するもっとも大きなICT輸出国になり、その輸出高はICT製品における日本の全輸入高の26%、アメリカの全輸入高の19%を占めるに至った。さらに、本論文は、中国のICT輸出の急速な成長が他のアジア諸国、すなわちインドネシア、マレーシア、フィリピン、シンガポール、韓国、タイのICT輸出を閉め出しているか否かを調査している。経験分析は、中国のICT輸出の急速な成長がシンガポール、韓国、フィリピンにネガティブに影響していることを示している。マレーシア、タイに対する影響は不明確で、それは特定の製品カテゴリーに関連している。他方、インドネシアのICT輸出は、中国のICT輸出と同時に拡大している。

##### (2) 解放経済下における発展途上大国の外性的技術進歩と先進国の厚生水準

概要：我々は標準的なリカードモデルを使い、一般的な条件でのサミュエルソンの数量

的分析結果を発展させた。特に、我々の分析は、発展途上国と先進国の相対的生産性が等しくなる前でさえ、発展途上国における累積的技術進歩が先進国の厚生水準を徐々に低下させることを示している。もし技術向上が比較優位の初期のパターンを変えないならば、先進国にとって自由貿易は自給自足経済よりなお望ましい。しかしながら、厚生水準へのマイナス影響は、発展途上国の相対的規模に依っている。一般的に、先進国がその当初の技術的リーダーシップを維持しているならば、相対的に小規模な発展途上国における技術進歩の累積は、先進国の実質所得を押し下げることにはできないだろう。

#### 5. 主な発表論文等

(研究代表者、研究分担者及び連携研究者には下線)

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## 6. 研究組織

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