

Comparative Analysis of Reshoring Production between Japan and U.S.

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Abstract — Japanese and U.S. manufacturing companies have been increasing their production in developing countries, especially in China since the 1990s. In recent years, a new trend, “Reshoring Production,” is emerging. Since it is a new phenomenon, the academic study has just started. Through a literature review, this paper provides factors that drive reshoring production in Japan and U.S. Furthermore, we compare the driving forces of these two countries and clarify the common and country-specific factors.

Keywords — comparative analysis, reshoring production, driving factors, Japan, U.S.

I. Introduction

Since 2012, the expected employment recovery in the United States highlights the necessity of reshoring the manufacturing industry. The objective is to increase the number of people employed domestically, as the industry's offshoring production has increased since the 1980s. Reshoring also aims to revitalize the U.S.'s domestic manufacturing industry through the increase in production and sales of products made in the U.S.

Reshoring production, or simply offshoring, is defined as bringing manufacturing back to its parent country [1];[2]. Reshoring closely relates to insourcing, onshoring, or backshoring. Therefore, reshoring production is fundamentally an issue of location decision [3].

However, reshoring is a political view which some claim does not exist as a real phenomenon. For example, Ohmae [4] has criticized reshoring as a view that does not "see the forest for the trees," based on the fact that the number of employees of Chinese-based American companies grew from 290,000 in 1999 to 1.44 million in 2009. Meanwhile, efforts have begun to examine the effectiveness and difficulties of reshoring from an academic perspective. The fact is that reshoring is a phenomenon that has not only been observed in America but since the mid-2000s, also in Japanese corporations and European multinational corporations from countries like England, France, and Italy.

In this paper, we compare the studies on the U.S. and Japanese reshoring and identify the differences and commonalities over reshoring in the two countries.

II. Research of reshoring production in U.S.

Boston Consulting Group is among the first who noted the rise of reshoring in the U.S. [5]. Reshoring was promoted to a matter of policy. Labor costs of the city of Shanghai and other cities in China and the U.S. were compared and the results were that the U.S. was cheaper by 30%. Moreover, in order that U.S. might exceed the wage and salary costs of Shanghai and other cities in China, an analysis by the Boston Consulting Group concluded that China was cheaper than the U.S. [5].

As a result of this analysis, with the 2012 presidential election around the corner in the U.S., reshoring for more employment became a political challenge. Thus, various recommendations were presented mainly by business consultants. In addition, the Obama Administration announced “The President’s Plan to Revitalize American Manufacturing.” In July 2012, after the presidential election, President Obama promised to establish the Institute for Manufacturing Innovation (IMI) and to step up enforcement of the National Network of Manufacturing Innovation.

However, those consultants’ proposals had few scientific basis. The following scholars studied actual reshoring.

Sirkin et al. [5] suggest that offshoring production and reshoring production may replace supply chain, but additional research is required.

Ellram et al. [6] studied the basic theory of reshoring production. They tried adoption of Internationalization theory of Rugman [7]. In addition, they [6] concluded the following:

1) “Factors affecting a region’s attractiveness for movement of manufacturing change significantly over time, with Government Trade policies increasingly considered as a differentiator.”

2) “Supply chain-related factors are becoming more important in manufacturing location decisions.”

3) “Companies are increasingly moving beyond cost savings to consider impact on total cost, profitability, and customer value creation when determining preferred regions for manufacturing locations.”

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Moreover, Porter and Rivkin [8] identified the existence of hidden costs in offshoring and presented a study showing that the American manufacturing industry is coming back to the United States, or reshoring, because of a sudden increase in labor costs in overseas production and a shale gas revolution in the country.

Moreover, Gray et al. [3] insisted on the existence of hidden costs and risks in lengthening supply chains as a key point to reshoring. Casson [9] shows the influence that host countries can have on costs and risks factors in deciding a manufacturing location on a global level.

In addition, Margulescu and Margulescu [10] and Tate et al. [11] have completed the newest research into reshoring. First, Margulescu and Margulescu gave the main causes of the decrease of offshoring:

- 1) The wage differential between developed countries and countries with cheaper labor cost is lessening,
- 2) Great damage due to productive features and (skills) renewal and differences in quality (of products),
- 3) The distance between the producing area and markets with demand is too great, and the response becomes too slow,
- 4) The products' appearance and the reduction of implementation costs of new industrial technologies that diminish the labor costs,
- 5) The avoidance of problems in the supply chain and management.

Margulescu and Margulescu [10] concluded that reshoring is becoming necessary due to the Western economic environment, manpower, labor law, developed infrastructures, and many factors in the industry cluster and stable tax systems regarding the relocation of international manufacturing locations.

Tate et al. [11] carried out a survey within 319 American offshore companies and identified that about 40% of surveyed companies wished to relocate in the United States. Next, they demonstrated that American companies were reappraising the installation of their factories, keeping in mind the global competition, the location of their customers, natural disasters, the currency exchange, labor costs, and transportation expenses .

Looking at the American reshoring debates scheme, consultants started to identify a predominance of production in the United States due to the manufacturing locations change process caused by the sudden rise in labor costs in China. From the moment it became a policy agenda to expand employment, it immediately prompted propositions and studies.

Studies showed that within the supply chain, there are cases of reshoring where transportation expenses fall behind labor costs, and fuel supply costs fall behind transportation expenses and labor costs.

iii. Research of the reshoring production in JAPAN

Reshoring research started to be conducted in Japan in the 2000s [12];[13];[14]. Inoue [15], Yoshihara [16], Momotake [17] and Nakayama [18], who study international management, took up reshoring as a new enterprise behavior for Japanese manufacturers to "increase focus on domestic manufacturing."

Inoue [15] notes, "from 2003 onward, in the investment trends among Japanese manufacturing firms, the tendency toward reshoring clearly becomes more visible than before. This began amid the movement of factories to regions around Asia that had begun in the late 1980s and continued for 15 years, the so-called 'Asia shift.' In particular, a series of large-scale domestic investments in the digital appliance field by major home appliances and electronics manufacturers stands out." Furthermore, he notes, "manufacturing activities that had been transferred temporarily to places in Asia were 'reshoring' back to Japan, and there were cases of production pulling out from abroad and assembling domestically." He sees the phenomenon of returning to domestic production as a new phenomenon, not previously seen in Japanese manufacturing. However, he shows awareness that "the 'Asia shift' that had continued for 15 years did not cease, nor did it reverse," as well as that "it could be said that this new phenomenon of returning to Japan, which had not previously stood out, was being added to, to some extent."

During the period when companies continued to relocate their manufacturing plants from inside Japan to other Asian countries, for over 15 years since the late 1980s, Inoue [15] pointed out that there have been many cases where companies shut off their manufacturing operations in those Asian countries and moved their plants back to Japan, especially after 2003. However, he also stated that the tendency of production relocation to other Asian nations has been continuing. Finally, Momotake [17] concluded that this revival is built upon Japan's accumulated skills and technologies as well as the vital strategic developments of Japanese manufacturers.

In the case of small and medium size companies electing to engage in reshoring in order to capitalize on the advantages of the domestic location, putting energy into developing markets as part of in-house product planning and responding to difficult manufacture orders have been identified as important for increasing revenues and profits, in addition to low costs and mass production capabilities [18].

iv. The features of reshoring production in Japan and U.S.

The present object of reshoring production in Japan and the U.S. is China. Firstly, as a very important driving factor of reshoring, we can point out the country risk which explains political, economic and social risk of the invested country (

table.1).

If the risk becomes higher than before, not a few companies will reshore manufacturing. Secondly, labor cost is also very important. Wages of factory workers have been increasing rapidly year by year (the average wage of workers increased more than fivefold in 2012 compared to 2000 in China). Similarly, when the currency of it's own country become cheap, then labor cost, electricity cost, and transportation cost of the foreign subsidiary rise. Moreover, in the field of product quality, productivity by comparing the domestic country with the local country, if the domestic country is advantageous, shows that reshoring production increases.

The common features of reshoring production in Japan and the U.S. are as follows:

1) China's country risk is higher than that of Japan or the U.S. because of worsening environmental problems, an increase in crime, political instability, etc. These risks affect manufacturing activities in China and promote reshoring production[19],

2) Chinese personnel expenses jump and weak yen were set to main triggers[20];[21],

3) If the average quality of manufactured goods is lower than that made in Japan or the U.S., and defective goods could result in significant financial losses later, these will be the driving force of reshoring[22],

4) Poor records of protecting intellectual property rights and increasing leaks of technologies promote reshoring[23],

5) The introduction of the industrial robot and computer machining systems resulted in high productivity in Japan and the U.S.[24];[25]

On the one hand, in Japan, there are two driving forces of

reshoring as follows:

1) Manufacturers are very good at making value-added products by close coordination between machinery makers and parts suppliers (e.g., Keiretsu-based supply chains).

2) Business was improved by the large-scale monetary easing policy carried out under prime minister Abe, therefore the yen had continued to depreciate since the beginning of 2013. This promoted reshoring activities of Japanese overseas affiliated companies.

However, in recent years, overseas production has been increasing in Japan's manufacturing industry in spite of a weak yen. In addition to low labor costs, the expansion of markets in emerging nations like BRICS or VISTA with growing economies is also a big reason. Compared to companies that are focused on domestic markets, companies that develop international operations have had more growth in terms of revenues and profit [18].

On the other hand, in the U.S., there are several driving forces of reshoring as follows:

1) Because shale gas production came under way in 2013, significant cost reductions in electricity and raw materials are expected in the future, which would enable manufacturers to make high quality products.

2) In addition, shifting from overseas production in China and developing nations to domestic production can cut back transportation costs, and it also enables a lower production cost, cuts down production lead time, and makes higher quality products.

3) Through a U.S. policy in the revival of domestic manufacturing, manufacturers can receive benefits such as tax reductions. [5]

Table1. Driving Factors of Reshoring: Japan and U.S. (relative evaluation)

		Japan ↔	Foreign country (Production subsidiary) ↔	U.S.
country risk [19]	◎	low	high	low
exchange rate [27]	◎	weak Yen	strong	weak Dollar
labor cost [20];[21]	◎	high	low (but rising rapidly)	high
quality of products[22]	◎	high	low	high
electricity cost[26]	◎	high (26cents/kwh)	low (8cents/kwh :China)	high (12cents/kwh)
awareness of intellectual property protection [23]	◎	high	low	high
customs duties [28]	◎	free	high	free
productivity[24];[25];[29]	◎	high	low	high
transportation cost [30]	●	low	—	high
transportation time[31]	●	short	—	long
main triggers of reshoring	●	weak Yen	rapid wage increase	government policy, Shale Gas boom

◎common factors between Japan and U.S., ●different factors between Japan and U.S.(country-specific factors)

V. Conclusion

By comparing reshoring across Japan and the U.S., this paper was able to reveal the main causes which are common to the two countries, as well as those particular to each country. At present, reshoring by both countries is targeted at China, and the phenomenon can be witnessed in companies such as Canon, Daikin, and Panasonic in Japan, and GE, Ford, Caterpillar, and Apple in the U.S.

When comparing relatively with emerging nations such as those in Southeast Asia, it appears likely that similar factors will arise in these countries and that reshoring will take place in countries apart from China in the future. At present, reshoring is being conducted only by certain companies and is yet to develop into a major trend. In Japan and the U.S., due to the continuing advance in introduction of automation and industrial robots, labor costs account for only around 20% of manufacturing costs. Due to that fact, reshoring is decided not only on the basis of labor costs but also due to the complex array of other causes stated above (invisible assets).

Further research is required in order to explain clearly and empirically the mechanisms and processes underlying reshoring in advanced nations. Thereby, reshoring, not as an ignominious passive retreat but a strategic withdrawal, will be a new method of business development of multinational companies.

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