

Decentralization of Manufacturing: Taking GE as an Example

Yifan Shen

School of Economics and Finance, Shanghai International Studies University, Shanghai 200083, China.

ivanshen99@163.com

Abstract

This report focuses on International business, which mainly studies the pros and cons of international enterprise supply chain and factory migration to analyze the balance between technological manufacturing and industrial manufacturing in developed and developing countries in the process of globalization. This problem is further illustrated by a specific analysis of whether GE General Electric is benefiting from building a factory in China or moving back to the United States. China's growing wages and expensive transportation costs have forced GE to transfer its manufacturing operations back to the United States. At the same time, the increase in labor productivity has further narrowed the wage gap. First, I will explain why, under Porter's diamond model, it's good for GE to move manufacturing back to the United States. Then, I will discuss whether it is a trend for multinational companies to transfer the manufacturing back to developed countries, and to determine which type of company is most likely to do so.

Keywords

Decentralization, Manufacture, GE.

1. Introduction

The increasing wage in China and costly shipping fees are forcing GE to move its manufacturing back to the US. Meanwhile, improved labor productivity further closed the gap in the wage difference. I will first explain why it's good for GE to move manufacturing back to the US under Porter's Diamond model. Then I'm going to talk about whether moving manufacturing of multi-national corporations back to developed countries is a trend as well as determine which type of corporations are the most likely ones to do this.

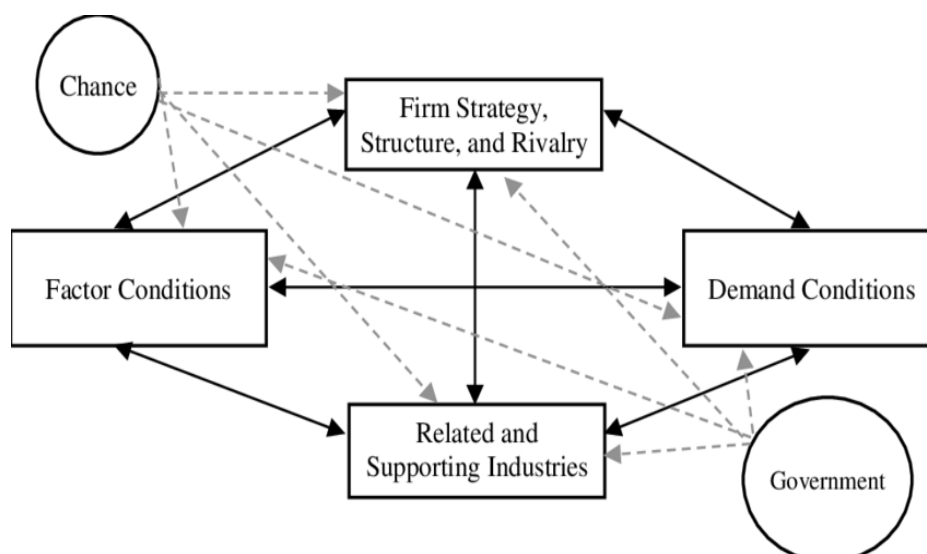


Figure 1 Porter's Diamond (Source: Passport)

2. Porter's Diamond

2.1 Factors

The factor conditions inside the model include factors as wages, land, natural resources and so on. The cost of these factors are made up of the fixed cost (like land) and various cost (wages and resources).

Data below is calculated by productivity per employee being divided by total wage of employees. This data shows the efficiency in manufacturing. From the calculated data shown below, we can see the certain amount of productivity per wage paid in the US is higher than that in China, which certifies the rationale that the efficiency in USA can make up for the wage difference. And the going down trend of such index shows that the labor cost, especially the wage is going up in China. China is no longer the cost leader in terms of labor cost.

Geography	2014	2015	2016	2017	2018	2019
USA	1.97	1.95	1.93	1.94	1.96	1.95
China	1.47	1.41	1.41	1.39	1.18	1.18

Figure 2 Productivity/wages (Source: Passport)

2.2 Supporting Industries

And the related supporting industries include shipping, and power supplying companies are also important because all the expenses go into the final price of products, which could be unaffordable by customers if too high. Shipping costs and power costs are not that cheap in China. The shipping cost greatly depends on the value-to-weight ratio. As GE manufactures both small appliances as well as big ones, whose value-to-weight ratio is low, this could lead to a high shipping expense.

2.3 Demand

As for the demand conditions and rivalries, GE's main part of customers are rooted in North America. Based on the analysis above, if the direct costs and indirect costs like shipping costs are both added to the products costs, the price could be higher than being manufactured in USA. This situation will not be friendly to US customers, and also offer opportunities for its US competitors.

2.4 Rivalries

GE deals with industry electricity solutions as well as household electricity solutions. In China, there are both competitors in industry electricity area and household electricity area, including Oppo, Philip Main customers in China are facing many choices on the suppliers. But GE has built customer loyalty due to its long-term construction of customer relationship in China. So it remains unknown whether such Chinese customers could be retained if GE moves manufacturing from China to the US.

2.5 Government and Opportunities

Along with the four elements, chance and government factors should also be considered. The trade war between China and USA could also harm the stability of the manufacturing overseas. If the trade war continues, it's unfavorable for product made in China to be exported to the United States, which could greatly affect the import of GE in the US.

3. Moving to Other Countries

Although it's true that moving manufacturing from China back to developed countries does save expenses and have other benefits. But as we have seen that such benefit arises from the decline of the wage gap between China and the US. There do exist some developing countries which have much lower labor cost and resource expenses as well as shipping costs. In this case, moving manufacturing

from China may be true, but where to move the manufacturing could be an issue as the cost in some developing countries, along with the government policies, are beneficial to corporations.

3.1 Productivity Efficiency

Below listed the productivity efficiency of four typical countries. Two developed countries in North America and two developing countries whose manufacturing industries are strong. We can see that because of the cheap labor cost in India, the productivity efficiency index is the highest one among them, and on an obvious rising trend. Like India, many other developing countries’ advantages of cheap labor cost can offset the standalone low efficiency. Thus, developing countries like India are likely to be the next territory of multinational-corporations’ factories.

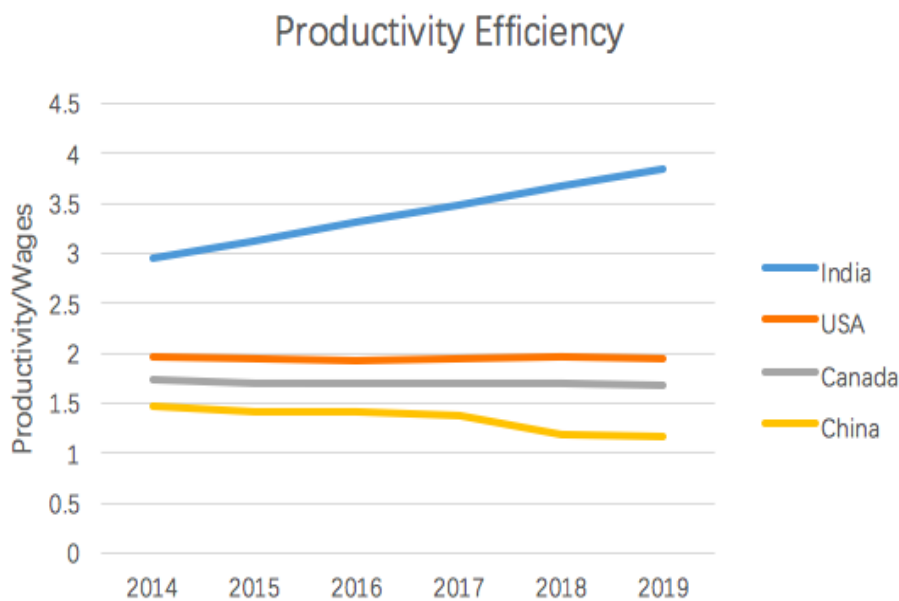


Figure 3 Productivity Efficiency (Source: Passport)

3.2 Tax

Tax burden in India, as shown below, is much lower than that in USA. Many of the developing countries’ governments have policies to promote foreign direct investment in factories and oversea branches, offering a decent amount of subsidies.

For manufacturing corporates, they have to consider about the sales tax, profit tax as well as value add tax, so it’s hard to judge what the exact amount of tax they are paying throughout the whole production process. This need to be applied to countries and to be analyzed further.

	India	USA	Canada
Tax less subsidies (USD)	294,802.74	734,535.60	121,386.75

Figure 4 tax less subsidies in manufacturing(USD)

There’s still some need for some multi-national corporations to move their manufacturing back to North America, especially for those featuring high-tech. As these high-tech products requires more amendments even if they are put into production. Small improvements and changes in design may greatly simplify the producing process and refine customers’ experience with the products. It is the most likely for these types of companies to move manufacturing back to North America.

4. Conclusion

The rationale of GE moving manufacturing back to USA could be clarified. But whether this is suitable for all manufacturing companies should take other factors into accounts, as some developing countries may have much cheaper labor and resource cost than China. In all, there do exist some types of corporations, like high-tech companies, that could benefit from the manufacturing moving back to North America.

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