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Strategic Reshoring: A Literature Review

Kathleen Bolter

W.E. Upjohn Institute for Employment Research, Bolter@upjohn.org

Jim Robey

W.E. Upjohn Institute for Employment Research, jim.robey@upjohn.org

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Strategic Reshoring: A Literature Review

Prepared for
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4415 Euclid Avenue, Suite 203
Cleveland, Ohio 44103

Prepared by

Kathleen Bolter, PhD
Jim Robey, PhD

Regional and Economic
Planning Services
W.E. Upjohn Institute for
Employment Research
300 South Westnedge Avenue
Kalamazoo, MI 49007
269-343-5541

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Key Takeaways

- Reshoring, the relocation of production processes that had been offshored back to the home country, has accelerated over the past decade.
- Firms choose to reshore for a variety of reasons, including the miscalculation and underestimation of the full costs of offshoring, increasing costs in developing countries, a need to balance cost savings and risk dispersion, branding, improved product quality, wanting to locate near R&D, proximity to markets, increased flexibility of production, and growing digitalization and automation in manufacturing.
- Reshoring primarily results in jobs for high-skilled workers whose labor complements the increased automation within production facilities. A lack of high-skilled workers may serve as a disincentive for firms to reshore.
- More competitive costs in the U.S. South and Midwest are making these locations attractive to firms looking to reshore.
- Several public policies such as the Tax Cuts and Jobs Act, tariffs on goods from China, and state and local tax incentives are encouraging firms to reshore.
- Reshoring is likely to accelerate in response to the COVID-19 pandemic which has decimated supply chains around the world.

Introduction

In determining how to lower their total cost of production, one of the primary questions facing manufacturers today is where to locate their manufacturing facilities. The location decisions of firms are quite complex and involve numerous factors and conditions. In the late 1990s and 2000s offshoring from high-cost countries in the developed world to low-cost countries in the developing world was one of the dominant supply chain management strategies. Since the Great Recession, reshoring, wherein businesses bring back their supply chains and production to their home countries, has become more prevalent. As of 2018, more than 340,000 manufacturing jobs have been announced as returning to the United States through reshoring (Reshoring Initiative, 2019).

The goal of this literature review is threefold. First, to define reshoring and how to contextualize it within the location decisions of firms. Second, to examine the reasons firms decide to onshore their production processes. Finally, to examine the potential impacts of reshoring on the location to which firms are returning. This literature review reveals there are multiple reasons for reshoring. The primary motivations are to reduce total costs, mitigate risk, and capitalize on technological advancements in manufacturing. The jobs reshored are not direct substitutes for the jobs offshored. Reshoring is likely to increase job opportunities for high-skilled workers within manufacturing. Additionally, in light of the COVID-19 pandemic, the total number of firms reshoring production is likely to grow.

Defining Reshoring

Firms make location decisions based on the best combination of cost and productivity measures to maximize the overall utility for the activity of that firm. Over the past few decades companies have made location decisions with the aim of increasing competitiveness in global markets, in effect creating advanced and worldwide supply chains (Kano, 2018). The globalization of supply chains and offshoring of firms has yielded many benefits such as access to natural resources, low cost of materials and labor, incentives provided by host governments, and improved market access to developing countries. However, for many firms offshoring has not yielded the imagined benefits (Ellram, et al., 2013). While many companies have successfully placed operations offshore, there are still a number for whom offshoring has not been profitable.

Companies that did not achieve the expected competitive advantage from offshoring are finding onshoring and reshoring to be attractive strategies. Each of these strategies are slightly different but represent similar concepts. Onshoring refers to locating production close to market demand (De Backer, et al., 2016). In this sense, onshoring can be a type of reshoring (e.g. when a firm relocates its production from China to the United States). However, it can also be a form of offshoring (e.g. when a U.S. company builds new facilities in China in order to be closer to the Chinese marketplace).

Reshoring, on the other hand, is the relocation of production processes that had been offshored back to the home country (Goldense, 2018). It is best viewed as a location

decision only, independent of whether suppliers or parent companies are performing the manufacturing operations in question (Gray et al., 2013). In this sense, reshoring is always a type of onshoring. However, unlike onshoring, reshoring cannot be examined in isolation, but rather as a reversing of a prior offshoring decision. Regardless of which term is used, the consequences worth examining are the same: that some function of the production process has been returned to the United States. For the sake of simplicity, this analysis uses the term reshoring to refer to that process.

One important thing to keep in mind is that the phenomenon of reshoring does not mean the end of offshoring. For some manufacturing activities, especially those that require high labor content, it simply is not feasible to bring back all activities that were offshored (De Backer, et al., 2016). Additionally, because of the extensive supply chains already in place and burgeoning demand for manufactured goods, international markets, such as China, will remain an attractive location for many producers (Booth, 2013). Analysis of firm location decisions suggests companies are not abandoning overseas operations. However, some are building new capabilities in the United States in order to meet domestic demand (Rice, 2014). It is important to remember that while many firms choose to reshore, this does not mean that offshoring ceases. Although they receive less attention, firms moving from one developing country to another are quite plentiful. Many firms have shifted production from China to Vietnam, Indonesia, Thailand, the Philippines, and Mexico, while at the same time expanding operations in the United States (Oldenski, 2015).

Reasons for Reshoring

There is not a single criterion that explains why firms make the decision to reshore (Wiesmann et al., 2017). However, several reasons have been cited for why moving production back to developed countries has become an attractive option:

Miscalculation and Underestimation of the Full Costs of Offshoring

When offshoring was motivated by cost-savings and access to new markets, and when these initiatives perform poorly, companies are more likely to relocate them (Albertoni, et al., 2017). Management, logistical, and operational costs have, in some cases, made offshoring unprofitable. The cost of coordinating, monitoring, and communication between parent companies and distant affiliates can be greater than initially envisioned. Early in the offshoring wave, companies copied the behavior of their competitors, thinking primarily of the “out of factory costs” and not the full cost of production (De Backer, et al., 2016). For many firms, capturing the benefits of offshoring are tied to firm-specific resources. Companies from the same industry, with identical strategies may have wildly different results when it comes to offshoring (Zaheer & Nachum, 2011). Technology-based industries characterized by strong final producers and original equipment manufacturers with high levels of product customization are likely to reverse their offshoring decisions more quickly than other firms (Ancarani et al., 2015).

Increased Costs in Developing Countries

Production costs have increased significantly for offshored activities in low-cost developing countries. Everything from wages to energy costs to building costs have dramatically risen. Companies embraced offshoring in order to make use of the low labor costs, business friendly regulatory environment, and access to raw materials. However, over the past few years, wages in countries such as China and India have grown by 10-20% annually (Chen & Hu, 2016). The increased labor costs in China, combined with the appreciation of the Yuan against the dollar, were likely factors in reshoring decisions (Pearce, 2014). Firms that initially set up new factories in Asia are significantly more likely to reshore than those that built factories in other places, such as Eastern Europe or Mexico (Ancarani et al., 2015). As costs rise in developing countries, the cost savings of offshoring have been reduced for many companies.

Balancing Costs Savings and Risk Dispersion

The more firms spread their operations around the globe, the more vulnerable they become to unexpected events such as natural disasters and political unrest. Breakdowns in one part of the supply chain have reverberating effects for other parts of the supply chain. Additionally, less developed legal systems of intellectual property rights may mean that local suppliers become competitors. In deciding to reshore, firms are diversifying production locations to reduce geographic risk and locating facilities closer to end markets (Rice, 2014). Firm size effects the duration of offshoring with small- and medium-sized enterprises reshoring more quickly than large firms (Ancarani et al., 2015). Small- and medium-sized firms exhibit higher levels of vulnerability when it comes to environmental changes making internationalization more challenging and more difficult to absorb (Lu & Beamish, 2001). Rehoring creates positive shareholder wealth effects with an average increase in the value of a company's stock of 0.45%. For most firms, the benefits of onshoring tend to outweigh the costs (Brandon-Jones et al., 2017).

Branding and Improved Product Quality

For some firms, public opinion has been a driver of location decisions with public information campaigns driving firms to avoid locations with few labor protections and low wages. Firms are using the opportunity to reshore as part of their branding, publicizing patriotism and demonstrating that the firm puts local jobs above profits (Delis, Driffield, & Temouri, 2019). The majority of firms that decide to reshore to the United States are headquartered in the United States (Booth, 2013). For many companies, the "Made in America" label is a clear indication of status and quality of the brand (Van den Bossche et al., 2014). It is important for firms to maintain their reputations by ensuring quality. Reshoring enables companies to provide quick, effective monitoring over their production process, reducing flaws and errors before the end product reaches the customer (Theyel et al., 2018)

Colocation of R&D

The research and development capacity of the United States plays a key role in reshoring decisions. In 2012, 84% of R&D spending by multinational companies took place in the United States, a share that has remained virtually unchanged over the past decade (Oldenski, 2015). For some industries, typically those with a heavy engineering focus, innovation may slow down as production becomes separated from R&D (Pisano & Shih, 2009). Additionally, certain feedback effects in the value chain such as innovation and product changes are easier to manage in short supply chains. The United States fosters both an innovative culture, protects intellectual property rights, and trains and attracts high-skilled workers, making it an attractive option for manufacturing firms.

Proximity to Markets and Increased Flexibility of Production

One advantage of moving closer to markets is that it promotes shorter lead times and a faster time to market, especially for products that need to be customized or respond quickly to changing demand. Manufacturing firms are facing an unprecedented demand for products that allow for greater levels of customization and production techniques that provide a shorter time to market (Moradlou & Backhouse, 2016). Firms are choosing to retain and reshore manufacturing because it offers opportunities for new product development, better product quality, customization, delivery, and cost-savings. Simply put, reshoring enhances the flexibility and ease of doing business (Sarder & Nakka, 2014).

Growing Digitalization and Automation in Manufacturing

The complexity of production plays a key role in where firms chose to locate. In industries with higher labor costs, locating to developed countries has only recently become economically viable because of the increasing degree of process automation. (Arlbjørn & Mikkelsen, 2014) The new generation of manufacturing is adopting technologies associated with Industry 4.0 including additive manufacturing, robotics, big data, and the internet of things. The decision to reshore production combined with additive manufacturing reduces production time, increases customer satisfaction, improves flexibility in product design, speeds up delivery times, and enables firms to respond to quality issues more quickly (Moradlou & Backhouse, 2016). While reshoring does not seem to be associated with large increases in jobs, it is associated with higher levels of capital investments (De Backer, et al., 2016).

Impacts of Reshoring

Reshoring increasingly features in the policy debates of developed countries, especially when referencing the future of manufacturing. Within the United States, there is currently a revived interest in revitalizing and advancing manufacturing within the country (Kazmer, 2014). The reshoring of firms is likely to have significant impacts on the employment of local

communities, demands of workforce development programs, and economic development policies.

Reshoring is unlikely to result in the replacement of all offshored jobs as automation reduces the labor needed to produce products and increases the opportunities for primarily high-skill labor. Take for example the company Adidas. After many years of producing sport shoes in East Asia, the sportswear manufacturing firm built two new factories, one in Germany and one in the United States. Each factory employs only 160 workers, compared to similar production facilities in Asia that employ 1,000 workers. The reason for the employment discrepancy is the production in the Adidas factories in Germany and the United States is done primarily with automated computerized processes, industrial cutting robots, and 3D printers. The tasks performed by the human workers are primarily high skill and involve repairing and maintaining the robots (The Economist, 2017). The improved productivity of automated processes provides an incentive for firms to reshore parts of their production. However, when the majority of tasks being reshored are automated, reshoring does not generate many jobs for low-skilled workers. Rather, fewer high-skilled workers whose labor complements the automated process benefit from reshoring (Krenz et al., 2018).

A lack of high-skilled workers may serve as a disincentive for firms to reshore. High-skilled workers refers to those with special training, knowledge, or experience to perform highly specialized tasks. For many firms the availability of skills in an area is a concern as skilled tradespeople can be difficult to find and hire. For companies that choose to reshore, 26% picked locations based on skilled labor, supply chain synergies, and proximity to customers (Van den Bossche, et al., 2014). A 2018 report from the United States Department of Defense on recommendations to support a healthy manufacturing and defense industrial base to protect economic and national security highlights workforce challenges, including a lack of skilled workers, as one of the major impediments to supply chain resiliency. Having a base of skilled workers and managers is an important component of a successful reshoring initiative. In 2012, Otis Elevator attempted to move its production back to the United States to Florence, South Carolina. While there were other factors that lead to a rocky transition for the factory, the inability to find engineers and other skilled labor in such a small labor pool was an impediment to its success (Supply Chain Digest, 2014). Investments in STEM education, workforce training, and processes to hire high-skilled talents are needed in order to make reshoring an attractive option for firms (Saki, 2016).

Labor policy also plays an important role in firms' reshoring decisions. Firms are increasingly looking to the American Southeast and Southwest due to lower wages, operating costs, and higher economic incentives. The American Midwest is also increasingly becoming a popular destination for reshoring (Klie, 2020). When all costs are considered, South Carolina, Alabama, and Tennessee have some of the least expensive production sites in the industrialized world (Sirkin et al., 2011). While the manufacturing sector in the United States has grown in recent years, wages are lower than in the past while the jobs are increasingly temporary. In the 1980s manufacturing workers in the United States earned significantly higher wages than the U.S. average; by 2013, the average factory worker earned 7.7% below the median wage for all occupations. (Ruckelshaus & Leberstein, 2014).

Reshoring Trends in 2020

The reshoring of firms back to the United States is a trend that began to accelerate after the Great Recession and continues to pick up speed. Several recent policy changes have made reshoring an increasingly attractive option for firms. First, the Tax Cuts and Jobs Act, which cut the corporate tax rate from 35% to 21%, reduces the tax burden on U.S. firms (Crawford, 2018). There is also some evidence that the Trump administration's tariffs on goods from China have had an impact on reshoring initiatives. Ninety-nine percent of the companies that gave "tariffs" as a reason for reshoring did so between 2016 and 2018 (Moser, 2019). As the result of "trade wars," the current global supply chain was already under considerable stress (Stoneback, 2020). Finally, state and local tax incentives increase the viability of reshoring for firms (Pearce, 2014).

Reshoring is likely to accelerate in response to the COVID-19 pandemic which has disrupted supply chains around the world. As a result of the pandemic, firms are looking to adopt new supply chain set-ups including increasing the use of local suppliers to reduce exposure to global disruptions in trade flows. (World Economic Forum, 2020.) A Thomas Industrial Survey of Manufacturing Establishments found that in response to the COVID-19 pandemic, two-thirds of companies indicated they are likely to reshore production (Thomas, 2020).

Policy makers are now looking more closely at global supply chains to understand how products are sourced and to develop strategies for geographically diversifying critical industries (Rathke, 2020). Some U.S. Senators are proposing a \$25 billion dollar fund aimed at paying companies to exit China and bring production back home (Ben-Achour, 2020) Pharmaceutical manufacturing has received special attention from policy makers as the pandemic has highlighted the vulnerability created by relying on international supply chains for medicine and personal protective equipment, especially as national shortages of such equipment were reported (Zwiefel, 2020). There is an increasing pressure to have certain raw materials and products produced domestically, especially when restrictions have been put in place on export of critical products from international markets (Simmons & Crapps, 2020).

The COVID-19 pandemic is likely to accelerate the existing trend towards reshoring as firms work to make supply chains more resilient (Hannon, 2020). A recent report from the Site Selectors Guild found that 81% of respondents said COVID-19 will accelerate the regionalization of supply chains (Site Selectors Guild, 2020). As the pandemic wears on, many firms are considering restructuring their companies to hedge against the risks of transportation and operating restrictions such as shipping times and customs and border barriers (Simmons & Crapps, 2020).

Conclusion

The globalization of the supply chain has been developing for decades. In the process, countries across the world have become interdependent on each other to fulfill supplies and grow the economies of developing countries. However, this dependency has also led to risk as both the Great Recession and COVID-19 pandemic demonstrate (Maul, 2020). The decision to reshore is inherently a cost choice. With global supply chains facing increasing risks, the benefits of reshoring for many firms are beginning to outweigh the costs of not doing so.

The nature of manufacturing is changing both domestically and abroad. While the manufacturing of some goods may continue to shift to less developed countries, high-end, technology intensive manufacturing which requires adequate infrastructure, skilled workers, intellectual property protection, and integrated supply chains is likely to find domestic production to be the lowest cost and most efficient option. Successful firms will be capable of rapidly adapting to technology as manufacturing becomes faster, more customizable, and closer to customers. The implications for reshoring are substantial and achieving competitiveness for U.S. manufacturers will require an economic, educational, and regulatory policy that supports success.

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- Labor market analysis
- Facilitating and conducting effective one-on-one interviews, focus groups, workshops, and charrette sessions in a diverse array of environments
- Economic and workforce development and education strategies
- GIS mapping abilities
- Rural and urban land use and economic development planning services
- Regional data analysis

For questions or information about this report, contact Kathleen Bolter, Regional Research Analyst, bolter@upjohn.org or Jim Robey, Director of Regional and Planning Economic Services, 269-365-0450, or jrobey@upjohn.org.