



# Reshoring Manufacturing Back to the United States

Courtney L. Farrish, Sime Curkovic

Lee Honors College, Western Michigan University, Kalamazoo, USA

Email: courtney.l.farrish@wmich.edu

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## Abstract

The purpose of this study is to discuss the possibilities of reshoring manufacturing back to the United States and how this would either benefit or hinder the supply chain in the United States. Reshoring is the concept “of returning the production and manufacturing of goods back to the company’s original country” (Kenton, 2021) [1]. To explore this concept, I created a five-question survey targeted toward business-professionals that are involved in the supply chain. With the help of my thesis chair, Dr. Sime Curkovic, I received 113 responses. The point of the survey was to analyze business-professionals’ opinions on if they believe reshoring manufacturing is a good option, what benefits and risks they see with it, what makes them consider reshoring (if applicable), and what other options they’re exploring if they’re not considering reshoring. The results of this survey proved that a portion of manufacturing should be reshored back to the United States. The biggest risk associated with reshoring found in my survey is cost, and the biggest benefits are decreased lead times and decreased risk with factors such as quality and communication.

## Subject Areas

Economics

## Keywords

Supply Chain, Manufacturing, COVID, Reshoring

## 1. Introduction & Background

A term people may not have known before the pandemic is now commonly used: supply chain. Amazon deliveries delayed? Supply chain. Chicken shortages? Supply chain. Toilet paper flying off the shelves? Supply chain. How about the

chip shortage? Vehicles are left sitting in fields waiting for chips because the technology industry took over major chip suppliers when vehicle manufacturers laid off from purchasing chips, predicting they wouldn't be selling as many vehicles. Both vehicle manufacturers along with other manufacturing companies had to resort to laying off their employees due to slow production, and some manufacturing plants were even shut down completely. We know the word supply chain because of the everyday inconveniences we experience, but there are also major problems for the manufacturing industry.

Companies are experiencing increased lead times, and increased costs, and they are dealing with many unknowns. Supply chains are recovering, but the supply chain in the United States needs to become more resilient. I believe that the supply chain will be more resilient if all manufacturing is reshored back to the United States, and we are an independent country. This will allow for better visibility throughout the supply chain, shorter lead times, and easier communication among suppliers.

As a twenty-one-year-old senior in college, I doubt I am the most credible source. Thus, I created my "Opinions on Reshoring" five-question survey (**Appendix**). Before creating my survey, I educated myself about supply chains and COVID, so I could determine what information I wanted to gather from business professionals. The list below is of four articles I read to help me create my survey.

- *Reducing the risk of supply chain disruptions* (Chopra & Sodhi, 2014) [2].
- *International Comparisons of Hourly Compensation Costs in Manufacturing* (2016) [3].
- *Supply Chain Resilience: Exploring nearshoring to unlock new frontiers of Strength* (Jorge & Bergen, 2020) [4].
- *Competitive manufacturing for reshoring textile and clothing supply chains to high-cost environment* (Pal, Harper, & Vellesalu, 2018) [5].

In this paper, the results of my survey will be analyzed. I will also discuss cost, lead times, and risk reduction, and how these factors are associated with reshoring. Post-pandemic, demand skyrocketed, and manufacturing companies were scrambling to catch up, and they still are. COVID-19 showed flaws within all supply chains. One can argue that beyond wrongly predicted demand, the lead times from China and other countries overseas are making supply chains within the United States to suffer even further. I have always supported United States manufacturing and seeing all the issues that arise from the pandemic has made me want to be an advocate for reshoring even more.

## 2. Opinions on Reshoring Survey

To gain primary knowledge of what professionals within the supply chain industry are saying about reshoring, I created a five-question survey called "Opinions on Reshoring", receiving 113 responses with the help of Dr. Curkovic. Respondents of this survey are business professionals that have experienced the effects of COVID-19

on our supply chain firsthand. This survey shows the reasons both for reshoring and against reshoring. A review of the survey is shown below.

### 2.1. Question 1

Has the COVID-19 pandemic caused you to consider reshoring some or all manufacturing back to the U.S.?

As seen in **Figure 1**, 3.5% of respondents (4 respondents) said they believe all manufacturing should be reshored back to the U.S., 17.7% of respondents (20 respondents) said no manufacturing should be reshored, and 78.8% of respondents (89 respondents) said some manufacturing should be reshored. It's obvious from the chart above that most business-professionals believe that some manufacturing should be reshored back to the United States.

### 2.2. Question 2

Based on the previous question, what has made you either consider or not consider reshoring?

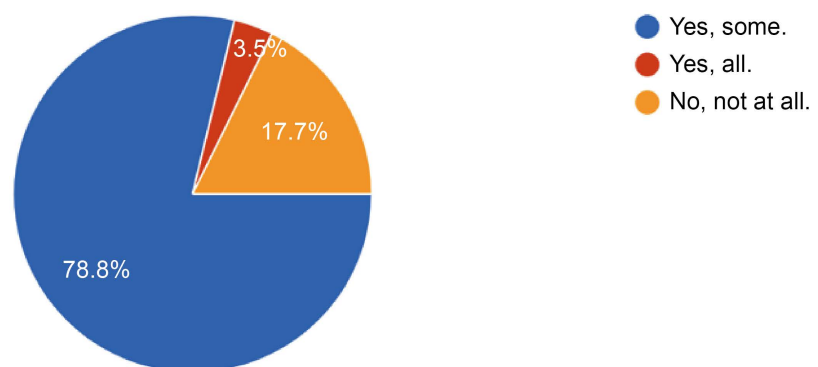
The most common topics brought up from this question were lead time/ transportation time, cost/price, and risk. 47 responses included mention of lead time reduction, 40 included cost/price, and 11 included risk reduction. Among the other 15 responses, gap buys, secondary sources, and strict customer approval requirements were common topics. By reshoring manufacturing, both lead times and risks associated with producing products overseas would be reduced. However, the biggest reason companies are hesitant to reshore their manufacturing is the high cost. Some costs included would be new machinery, set-up, training, higher labor costs, and higher raw material costs.

Note that there are 98 total responses in **Figure 2**. These 98 responses represent the top 3 most common responses for this question.

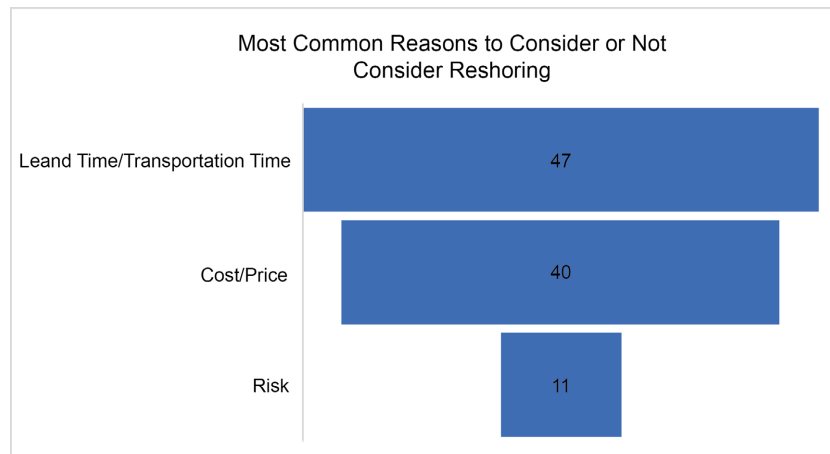
### 2.3. Question 3

What are the biggest benefits you see with reshoring?

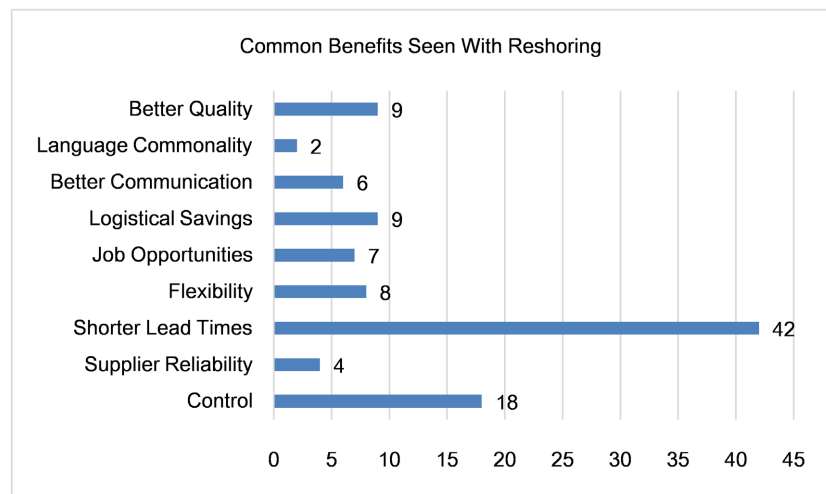
Some common responses from question three are shown above in **Figure 3**. While these are all specific benefits business-professionals see with reshoring,



**Figure 1.** Result of Question 1.



**Figure 2.** Result of Question 2.



**Figure 3.** Result of Question 3.

they are all factors that reduce risk within the supply chain in the United States. As you can see, the biggest benefit seen with reshoring is the shorter lead times, with 42 respondents including this in their responses. Having more control throughout the supply chain is also a common benefit seen with reshoring, with 18 respondents saying this. Control in a supply chain includes supplier control, inventory control, and quality control. Of course, these are all easier to control without communication barriers and the immense distance between a company and overseas suppliers.

Note that there are 105 total responses in **Figure 3**. These 105 responses represent the most common responses for this question.

#### 2.4. Question 4

What are the biggest risks you see with reshoring?

Like anything, there is risk. Some of the biggest risks business people within supply chain see with reshoring are shown above. Increased costs and prices is

by far the biggest risk respondents see with reshoring, with 78 responses mentioning this (Figure 4). While only 5 respondents directly said they see reshoring leading to inflation, the increased costs and prices associated with reshoring will also lead to inflation, which is a huge problem for the economy and American people. Besides cost concerns, labor shortages is the next biggest concern seen with reshoring. With all the unemployment being handed out, people don't want to work, and this is a huge problem with manufacturing companies. Not all manufacturing is automated, which means companies need manual labor. Reshoring can't happen if companies don't have enough labor to keep up with supplying demand or their manufacturing isn't automated.

### 2.5. Question 5

If you aren't considering reshoring, what other problem-solving methods are you using to mitigate risks and issues caused by the COVID-19 pandemic?

There are many ideas on how to mitigate risks and issues caused by the COVID-19 pandemic. Common responses to this question are show above. It is understood that even these potential solutions could bring up other issues. For example, the most common response to this question was to hold more inventory/increase safety stock so that getting products to customers isn't as difficult, especially in severe circumstances like the pandemic. However, holding onto inventory has a negative effect on a company's Return On Investment (ROI), which affects a company's stakeholders. If a stakeholder isn't getting a return on what he or she invested into a company, they could get angry and stop investing in the company.

Note that there are 75 total responses in Figure 5. These 75 responses represent the top 5 most common responses for this question.

### 3. Cost

As discussed previously, cost is the biggest concern with reshoring. Not all

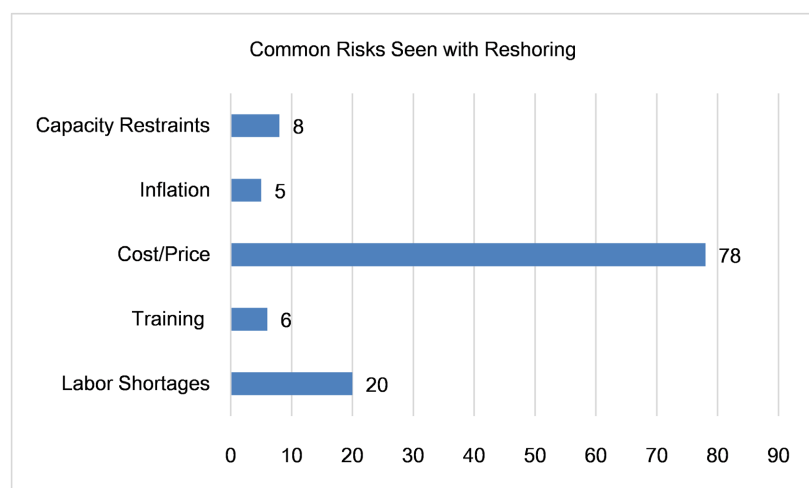
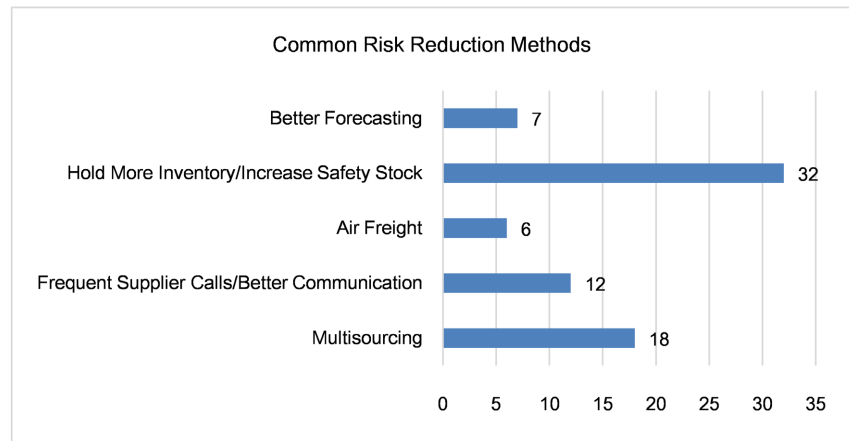


Figure 4. Result of Question 4.



**Figure 5.** Result of Question 5.

companies have the cash laying around to purchase new machinery needed to make parts in-house that they're used to outsourcing. This could even require a company to build a new facility: another cost. A company would also need to train their employees on how to make new parts, which costs money. A company might even need to hire more labor, and the labor cost in the United States is ranked eighth in the world, found from 2016 data (*International Comparisons*) [3]. Finding new suppliers is also a huge cost due to how much time it takes. If companies can get past the cost aspect of reshoring, then they should be able to work around other risks that will arise. Inflation will never go away, and we are already experiencing it right now. If the country can adjust to inflation and companies reshore their manufacturing back to the United States, our supply chain will be more resilient.

#### 4. Lead Times

As shown in Question 2, 47 respondents said that lead times is one of the major reasons they're considering reshoring. Before COVID, it took about three weeks to get a shipment from China. Now, it's taking anywhere from twelve to sixteen weeks. This is causing issues with production and meeting customer needs. Production is being slowed down dramatically due to waiting for parts and materials, specifically from overseas. If these parts are reshored and manufacturing in the United States, then companies won't have to wait nearly as long as they do while waiting on ocean shipment.

Long lead times causes less flexibility. Let's say a customer orders a product in the beginning of October. If that product needs parts from overseas, then the company most-likely won't start on production of that product until sometime in January. If the customer decides to cancel their order in November, then those parts are just stuck in the ocean, and either the company or supplier overseas will have to take the bite with the costs of those parts, which could lead to tension between a company and its supplier, leading to more issues. If the company gets those parts from a supplier in the United States, there is less time for a

customer to cancel order between the time of order and time the company receives parts for that product. There would also be better flexibility to reroute those parts if they were domestically sourced. The parts could be more easily moved from one truck to another, rather than being stuck in a container in the middle of the ocean.

## 5. Risk Reduction

By reshoring manufacturing back to the U.S., risk throughout the supply chain is significantly reduced, especially when it comes to shipping. There is no worry about how long products will be stuck at ports. Heaven forbid another pandemic occurs like the one we just experienced; suppliers would all be under U.S. regulations if all manufacturing was domestic. Working with suppliers in the U.S. also allows for more visibility throughout the entire supply chain, and with more visibility, there is less risk. As discussed in Question 3, business-professionals see many ways that reshoring would reduce risk in their supply chains: quality control, language commonality leading to better communication, reduced shipping costs, flexibility within the supply chain, and better supplier reliability. By reducing risk, there is less disruption throughout the supply chain. I believe that the best way to reduce the most risk in the supply chain in the United States is by reshoring manufacturing.

## 6. Conclusion

Whether all or some manufacturing is reshored back to the United States, there are clear benefits in doing so. My goal of this study was to explore business-professionals' stance on reshoring and the "Opinions on Reshoring" survey showed both pros and cons of reshoring with the vast majority of the 113 respondents stating that some manufacturing should be reshored back to the United States. There will need to be a capital investment in this process, but the overall benefits make the investment worthwhile. Companies will be able to meet customer needs faster and with more ease. Not only are there numerous benefits regarding the supply chain, but also products made in America sell themselves. By reshoring manufacturing back to the United States, our supply chain will be great again.

## Conflicts of Interest

The authors declare no conflicts of interest.

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Summary Tables.

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### Appendix—Five-Question Survey

**Q1:** Has the COVID-19 pandemic caused you to consider reshoring some or all manufacturing back to the U.S.?

- Yes, some.
- Yes, all.
- No, not at all.

**Q2:** Based on the previous question, what has made you either consider or not consider reshoring?

Your answer

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**Q3:** What are the biggest benefits you see with reshoring?

Your answer

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**Q4:** What are the biggest risks you see with reshoring?

Your answer

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**Q5:** If you aren't considering reshoring, what other problem-solving methods are you using to mitigate risks and issues caused by the COVID-19 pandemic?

Your answer

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