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PUBLIC-PRIVATE PARTNERSHIPS: POLICY PRESCRIPTION DURING THE ERA OF PANDEMICS

Abe Harraf 

Corresponding Author: University of Northern Colorado, USA
Email: Abe.Harraf@unco.edu

Jay M. Lightfoot 

University of Northern Colorado, USA
Email: jay.lightfoot@unco.edu

Adam Cole 

University of Northern Colorado, USA
Email: cole8246@bears.unco.edu

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Abstract

The COVID-19 pandemic caused disruptions in global supply chains that have resulted in prolonged shortages and financial hardships for many corporations. While organizations have dealt with supply chain interruptions for natural disasters and stock market crashes before, the COVID-19 pandemic presented a larger and unique challenge, and it required the need for resiliency in supply chains. This paper discusses several alternatives that can mitigate potential supply chain disruptions. Despite the natural inclination to protect domestic companies and industries, this paper cautions against the use of protectionism policies to prevent supply chain disruptions, as protectionism is proven to be damaging to innovation and eliminates the positive aspects of international trade and globalization. The paper recommends that governments and corporations establish strategically designed and aligned public-private partnerships that simultaneously encourage the principles of the free-market economy while providing increased preparation for supply chain disruptions caused by future global events. We further attest that Public-private partnerships will increase supply chain resiliency while simultaneously enhancing public welfare.

Keywords: COVID-19 Pandemic, Supply Chains, Globalization, Protectionism, Public Policy, Public-Private Partnerships

1. Introduction

The global pandemic has changed the landscape of how organizations should develop their supply chains. The restrictions placed on countries that supply vital resources to US organizations

have caused financial hardships and shortages of necessary supplies. COVID-19 highlighted the weakness of the supply chain systems “magnifying exponentially the social and economic repercussions of the global pandemic” (Orlando *et al.* 2022, p. 7). Global supply chains serving consumers in the US are being disrupted due to a lack of resilience integrated into supply chains. An uninterrupted supply chain for an organization is critical to the continuum that aids in the transformation of raw material to final goods to meet the market needs. As seen in Figure 1, a resilient supply chain is composed of four pillars: visibility, flexibility, collaboration, and control. As global markets and organizations become more complex, incorporating these pillars into supply chains becomes increasingly important, and the pillars allow disruptions caused by unpredictable events to be prevented, resulting in market efficiency.

The aim of this paper is to propose a partnership relationship that the public sector could strike with selected private sectors to mitigate the unfavorable supply conditions of vital consumer goods during pandemic. We, furthermore, contend that such partnerships could afford the market the needed stability during unsettling market conditions that are caused by unforeseeable pandemics. Our study attempts to propose the public-private partnerships as essential means in securing consumer confidence during unintended supply shocks.

Melnik (2015) recommends organizations build two essential components into their supply chain: resistance and recovery. He further contends that each of these components contains two subcomponents. Resistance encompasses avoidance and containment. Avoidance and containment involve being able to design a supply chain where an organization can avoid potential disruptions, and if needed, be able to contain it quickly with the least damage possible (Melnik, 2015). Recovery includes stabilization and return. Stabilization in a supply chain is having the ability to make necessary changes to the supply chain to counterbalance the impact during a disruption. Afterwards, an organization needs to have the ability to return its supply chain to the normal operating capacity and make necessary changes to prepare for future potential disruptions.

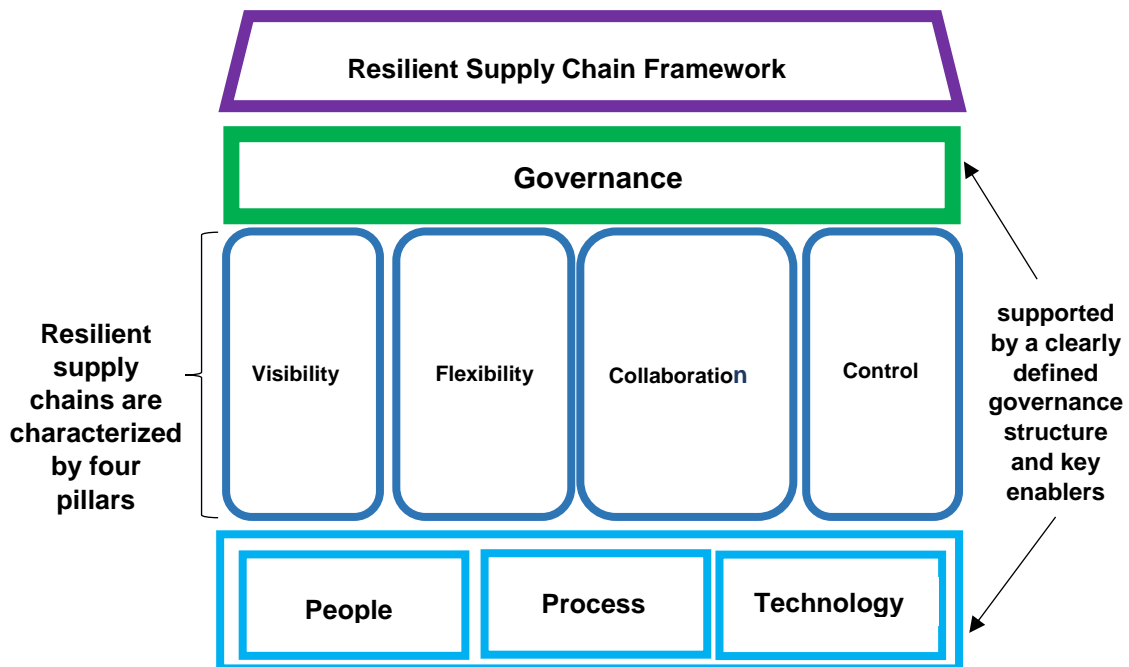


Figure 1. Key attributes of a resilient supply chain

Source: Adopted from Deloitte (2014)

Barriball *et al.* (2020) discuss how many organizations across the globe have increased their productivity. Organizations that have moved to a real-time visible supply chain and switched from monthly or semiannual planning to daily planning have seen increased productivity and

efficiency throughout their organization (Barriball *et al.* 2020). He further suggests that many global organizations will have regionalized supply chains for each market, allowing them to increase their supply chain resilience in case of unforeseen disruptions. With more organizations becoming globally interconnected, Barriball *et al.* (2020) suggest organizations quickly develop crisis response plans and grow capabilities to quickly adjust their operations when another “black swan” event is on the horizon (Barriball *et al.* 2020).

Cordon (2020) discusses the importance of organizations taking necessary measures to increase the resiliency of their supply chains. According to Cordon (2020), European pharmaceutical organizations source approximately 80% of their active drug components from China, and the top leading electrical manufacturing companies’ source around 40% of their parts from China. Cordon (2020) suggests that post-COVID-19; organizations begin to source supplies in more of a regionalized aspect. Developing a supply chain that is too reliant on a single country will leave an organization vulnerable if disruptions occur in that country. Alicke (2020) discusses the importance of an organization constantly auditing their supply chain and making changes when the organization is becoming too dependent on one country or organization (Alicke, 2020). Vanany *et al.* (2021) contend how the COVID-19 pandemic unintentionally created new norms and business environments that organizations must adjust to in order to survive. Chowdhury *et al.* (2021), in their review of supply chain studies of 74 articles, concluded that the need for resiliency of supply chains to mitigate the impact of the pandemic is fundamental in addressing supply shocks in the marketplace, particularly in high-demand, essential and medical products. (Moosavi *et al.* 2022, p. 14) concludes that “lack of resilient and sustainable supply chains could magnify the effects of pandemic and cause additional negative consequences.”

Moritz (2020) states the significant impact COVID-19 has imposed on supply chains in comparison to natural disasters and stock market crashes. Natural disasters that have occurred in the last twenty years have impacted supply chains, but their effects were temporary, and the disruption was concealed in a regionalized location (Moritz, 2020). COVID-19 is affecting all modern businesses, and with many US businesses outsourcing work in other countries, businesses are struggling to receive goods and raw materials to replenish their stock. The pandemic has resulted in a reduction of production capabilities and inventory capacity for organizations unable to secure adequate resources within their home country. This has led to a struggle to meet market demand (Mortiz, 2020). For example, in the recent pandemic, hospitals struggled to secure necessary equipment including personal protective equipment, ventilators, and other lifesaving gear.

Our study, by outlining those critical infrastructures that are considered essential to the welfare of the public, cautions the need for safeguarding the line between public and private good, and protectionism and globalization. It further proposes policy alternatives that could alleviate the harm to public welfare in the face of severe supply shocks caused by pandemics. The paper, moreover, sets forth a policy formula that establishing public-private partnerships on select consumer goods is a recipe that requires further study and examination to prepare for future supply shocks that could disrupt an effective and efficient operation of the supply chain for vital consumer goods.

2. Public vs. private goods

Unforeseen and worldwide interruption requires countries to strike a balance between responsibility to produce public vs. private goods. There must be policies that ensure the production of vital goods and services will remain uninterrupted.

Drahos (2004) defines the public good in two parts. A public good is non-rivalled, which indicates that when one person uses the good, it does not stop others from being able to use the good or service. A public good is additionally non-excludable, which means that the price of the good is not so high that only certain groups of individuals would have access to the good. Public goods are not a single good, but they are a set of complementary goods and different types of social actors (Drahos, 2004). Public goods are products or services necessary to protect and promote the health and prosperity of citizens and the country itself. According to the Cybersecurity and Infrastructure Security Agency (2020), there are sixteen critical infrastructure sectors

necessary for the US to protect its citizens and remain resilient. These infrastructure sectors include food and agriculture, healthcare and public health, national defense, communications, energy, water services, transportation, and many more. These sectors are the backbone of the United States. As globalization continues to develop, US businesses and governments must invest in increasing the efficiency and resiliency of public and private good supply chains to ensure organizational and environmental sustainability. Caferra *et al.* (2022) examined the role of COVID-19 as a catalyst of transition towards more sustainability. COVID-19 illustrated the need for a delicate balance between globalization and protectionism. The effect of COVID-19 illustrated the importance of globalization to countries all over the world. If countries begin to overreact and take reactive precautions, it will negatively affect countries who participate heavily in global business (Appadurai, 2020). However, caution should be exercised because neither protection of domestic industries nor crowding the private sector out by government policies can afford to strangle the market economy and global trade.

3. Globalization and protectionism

As countries begin to look at different solutions that could potentially strengthen the supply chains of vital goods and services, the tendency to protect home businesses by imposing sanctions and high tariffs is becoming increasingly pronounced. Protectionism is when a government begins to create policies and take actions intended to protect individuals, businesses, and industries within their country (Garg, 2020). Since 2008, many countries, including the US, have established a sense of protectionism. They have adopted increased tariffs to protect selective industries, and through this, they have decreased global cross-border capital flows by 65% or a decrease of eight trillion US dollars (Kuepper, 2020).

Since the COVID-19 pandemic began, many countries, including the US, began discussing the implementation of more protectionism policies for the manufacturing industry to reduce their exposure to potential supply chain disruptions. Garg (2020) discusses the dangers of protectionism and how it will only hurt the US in revenue, innovation, agility, and being competitive against other countries. This is important because the current ecosystem of the business landscape requires agility and innovation to combat the inherent complacency that could result in taking the market position for granted, resulting in complacency (Harraf *et al.* 2015; Harraf and Soltwisch, 2016; Harraf *et al.* 2018). Protectionism hinders the ability of the US economy to thrive in the global marketplace because businesses cannot realize economies of scale, economies of scope, or achieve low production costs without taking advantage of the global marketplace. (Rinaldi, *et al.* 2022) argue that supply chain systems require adaptive management to successfully employ flexibility and ability to adapt to changes with agility. Research by Kazancoglu, *et al.* (2022, p. 10) revealed that “flexibility, agility, and responsiveness of supply chains are important to ensure resilience and sustainability against any disruptions.” The recent enactment of the trade war with China resulted in over 45 billion dollars in increased costs (Garg, 2020). As the US begins to shift its policies on international trade, defining public goods more broadly and striking a balance between protectionism and global business is essential.

The pandemic has affected global business in a way that has not been experienced before. As the pandemic continues to affect how global businesses operate, countries need to find new ways to help their respective businesses to strengthen their supply chains. Milovanovic *et al.* (2017) describes how globalization has led to organizations becoming spread thin when it comes to trying to organize the numerous suppliers. COVID-19 was not the sole cause of the weakened supply chains, but it revealed a symptom of a greater problem at play. Generally, globalization has led to less resilient supply chains, and because of this, businesses are not prepared for global disruptions, like pandemics and natural disasters.

Globalization has been a growing trend throughout the world to reduce costs. However, the pressure to remain competitive and meet investors' expectations resulted in the unintended consequence of reliance on foreign countries. What compounded the adverse effect of such dependency was the disruption of supply chains that are vital to the preventive measures that combat the pandemic. While supply chain executives have boasted about being flexible and agile, able to respond to both changes in demand and supply, the COVID-19 pandemic has confirmed

this notion as a simple fallacy. Going forward, it is important to utilize COVID-19 as a learning experience and construct more efficient and effective supply chains. Kagande *et al.* (2022) conclude that strategic and organizational barriers significantly influence the effectiveness of the supply chain management. Globalization and supply and value chains are constantly changing. The effects of pandemics are increasing the need for companies to adapt their supply chains in the face of evolving technological trends, shifts in politics, and geopolitical alignments.

Great organizational supply chains insist on end-to-end accountability which demands efficiencies and productivity in all steps of the process. Fierce competition around the world challenges companies to find better ways to manage their distribution channels from their supplier networks, producers and manufacturers, and through their distribution networks until it has reached the hands of the consumers. Building a resilient supply chain requires visibility, communication capabilities, flexibility, and having the capacity to adapt when confronted with disruptions.

Currently, many organizations lack such capabilities in their complex supply chains and are not equipped to deal with severe disruptions like a global pandemic or natural disasters. Barbier-Gauchard *et al.* (2021) attest that despite the advantages of a fragmented global value chain, it has marked disadvantages when the world economy encounters pandemics. As organizations grow, develop new markets for their goods, and seek ways to cut costs by outsourcing or importing their resources, developing a sophisticated supply chain becomes a natural outcome. Establishing strong communication and visibility through a complex supply chain is critical for the resilience of the organization. If an organization designs an effective early warning system, where they can detect potential problems within their supply chain promptly, they can make the necessary changes that are timely and effective.

4. Policy alternatives

From an institution-based view, major interruptions to the supply chain sometimes generate political responses as well. Global events, like pandemics, could disrupt supply networks which can result in legislative action. As a strategy, countries could potentially set a minimum on how much of a critical consumer good industry needs to manufacture domestically. Although production costs most likely will increase, leading to higher prices, it may be worthwhile government policy to offset the high cost of establishing a quota with a taxpayer-supported fund to make these quickly accessible.

Another possible solution for the government is to consider restricting exports of critical consumer goods to meet surges in domestic demand if necessary. Although the benefit of restricting exports or requiring multinational businesses to produce domestically, forgoing the opportunity to seek more economically available production processes is attractive, it can be detrimental to international trade and invite retaliation.

With globalization growing and international economies intertwining, countries must develop strategies to combat and prevent as many disruptions as possible in the future. One possible solution could be to make a government partner in the production of critical consumer goods. However, this strategy might crowd out private businesses and stifle competition. Another strategy could be requiring businesses to produce certain unperishable and vital consumer goods over the demand and assisting them with stockpiling the excess inventory without undermining further market globalization. Holding a certain amount of inventory within the country allows for having a safety net during the crisis and can better meet the needs of its citizens during troubling times. However, the cost of carrying inventory either by a private sector or government must be calibrated.

5. Public-private partnerships

Public-private partnership perhaps is the most probable solution moving forward. This partnership will likely have a lesser impact while ensuring the availability of vital consumer goods in times of crisis. Public-private partnerships are used throughout the US in many infrastructure organizations such as water, gas, and transportation. Public partnerships are used when large

projects that heavily affect the general population need to be completed with the assistance of one or many private organizations. Publicly funded organizations are known for their inefficiencies, and one of the notable benefits of this partnership is the increase in innovations and efficiencies that private organizations inherently seek out to meet the expectations of their stakeholders. Public-private partnerships producing vital consumer goods should be available to all industry players that are meeting certain thresholds and expectations. Such a partnership should be transparent, accessible, and created with many accountability measures that ensure public confidence.

During unusually disrupted market forces that result in shortages and consumer panic, the responsibility of a public-private partnership is the ability to plan for the necessary contingencies that the private sector alone cannot afford to undertake. Subsidizing the prices of goods in short supply, stockpiling of vital goods, reinforcing a reliable supply chain, and projecting confidence on the seamless flow of the goods are just a few examples of what such partnerships can afford to the economy.

While some might argue public-private partnerships might introduce added negative externalities in the market by inducing added control measures on partner organizations, the benefit of added confidence and availability of scarce goods clearly outweighs such potential shortcomings. During unusually severe interruptions to market forces, the ability to meet demand, while safeguarding consumer confidence, is the most important aspect for having government agencies as a partner to private organizations.

It is the recommendation of this paper that the US government create public-private partnerships with those private entities that are critical for the economy and effective operation of the market forces for vital goods. Although the public-private partnership may not be in operation during normal economic conditions, drawing out robust plans to immediately put the partnership forces in motion during a global pandemic or a natural disaster could potentially overcome the supply chain bottlenecks which emerge during unusual economic shocks.

This allows private organizations to continue to operate as usual when there is no need for expedited production nor stockpiling for increased demand. Without the establishment of public-private partnerships, organizations that produce and market essential goods will undoubtedly face challenges of meeting the market demand due to disruption in their supply chain network. However, caution should be exercised on safeguarding proprietary and trade secrets of privately owned organizations when they engage in such partnerships. Protecting the intellectual property of partner organizations should be of utmost priority to engage and entice a greater number of them in partnership with the government. Moreover, certain governmentally sanctioned economic incentives should be introduced to incentivize and sustain the partnership.

6. Results

The devastating impact of the recent pandemic served as a wake-up call to many countries. They painfully experienced that while international trade affords them a comparative advantage in specializing in certain economic activities, it exposes them and their citizens to unforeseen vulnerability. The continued sourcing of goods and raw material from abroad to gain a competitive advantage in the marketplace should be calibrated against measured contingencies. Without such contingencies to safeguard their supply chain and uninterrupted flow of goods and services, consumer panic will jeopardize the economic stability of the market, resulting in further disequilibrium. This paper attempts to discuss alternatives that can be utilized to mitigate such disruptions. We contend that crowding the private sector out by governments to engage in production and stockpiling consumer goods is not in the interest of adhering to the market economy system. We further argue that policies that encourage protectionism to curb the supply chain disruptions are equally damaging to promoting free trade and global outsourcing. However, establishing strategically designed public-private partnerships that safeguard the principles of the free-market system while being prepared for contingencies that result from disruptions to supply chains affords the nation assurance and public confidence. Such partnerships could reinforce the needed resiliency to the supply chains and enhance public welfare.

7. Conclusion

The proposed public-private partnership formulation could mitigate the unintended supply shocks that future pandemics might pose to the economy. However, as outlined, such partnerships should be carefully formulated and managed to safeguard the very foundation of the free market system by not crowding out the private sector. These partnerships should be strategically identified, intentionally formulated, and deliberately managed to protect public interest in the face of adverse market conditions that could disrupt the supply of vital consumer goods.

While the limitation of the proposed prescription to mitigate the supply shock of vital consumer goods is theoretical, future research that could utilize statistical modeling and analysis of building such a partnership in certain consumer goods industries could validate the benefit of such partnerships in enriching the consumer welfare.

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