

# Rethinking Supply Chain Disruption Strategy to Address Challenges of Diversification and Substitution as an Instrument Contingency in Some Manufacturing Firms in Indonesia

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Challenges of Diversification,  
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## ABSTRACT

The COVID-19 pandemic disrupted supply chains that had not yet recovered and were again affected by the Russian invasion of Ukraine. This situation threatens the global economy with stagflation and significantly impacts some manufacturing firms in Indonesia. The researcher focuses on alternative solution strategies as a direct consequence of the supply chain disruption. This study was conducted on some manufacturing firms currently facing significant problems with raw material supply. The researcher adopts a qualitative review methodology and in-depth interviews with a limited number of n=19 participants to find data analysis. An overview of findings as a basis for subsequent relevances and understanding for manufacturers considering developing relationship-integrated domestic supply chains. The operations of manufacturing firms that depend on imported raw materials must be shut down, resulting in rising prices. It is challenging for manufacturers to raise the price of finished goods. Manufacturers must begin developing domestic supply chains to be more cost-effective and to support sectors amid uncertainty and complexity in demand for future supply.

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## 1. Introduction

The global economy has always been dynamic and challenging for the domestic industrial situation, as evidenced by the COVID-19 pandemic's slowdown in economic productivity (see also: Abbas & Lan, 2020; Guo, Kubli, & Saner, 2021; Jongwanich, Park, & Wongcharoen, 2019). High inflation, high-interest rates, and a scarcity of capital indicate that the global economy is entering a new chapter, directly impacting supply chains (Abbas & Lan, 2020; Bhatti, Chaudhry, Rehman, & Bashir, 2021; Furceri, Carriere-Swallow, Deb, Jimenez, & Ostry, 2022). As the manufacturing industry's policy structure has changed, the efficiency principle has become more urgent and relevant (van Wyk, Naidoo, & Edoun, 2021; Zghurska, Somkina, Dymenko, & Kapelyushna, 2019). A supply chain is critical to the long-term viability of manufacturing, and it is critical to developing integrated relationships with both suppliers and customers. According to this source, global monetary tightening has significantly impacted Indonesia's supply chain, causing a slowdown. The scope of the production stages is critical, and action innovation is increasingly required to be flexible by identifying the ecosystem's potential as a choice and focusing on the capabilities and needs of the production.

Supply chain disruptions globally since the covid 19 pandemic and as a result of Russia's war invasion of Ukraine (see also Barman, Das, & De, 2021; Lin, Fan, Shi, & Fu, 2021; Moosavi, Fathollahi-Fard, & Dulebenets, 2022; Orlando, Tortora, Pezzi, & Bitbol-Saba, 2022; Wang, Dong, & Liu, 2022). Companies face daily disruptions. This view of business disruptions supports multiple equilibria (Linnenluecke, 2017; saad, Hagelaar, van der Velde, & Omta, 2021). Disruptions in the global supply chain will directly impact shipping cost issues and the sufficiency of raw materials for the continuation of domestic manufacturing production, such as in Indonesia (Barman et al., 2021; Li, Chen, Collignon, & Ivanov, 2021; Luvsandavaajav et al., 2022; Shafi, Liu, & Ren, 2020). Supply chain disruptions are economically detrimental to suppliers, producers, and consumers' prices which can result in inflation (Furceri et al., 2022). Supply chain disruption must be avoided through good management strategies, technology, and flexible and inclusive inventory management strategies (Lin et al., 2021; Zheng, Shou, & Yang, 2021). Uncertainty begins with the initial material supplier and progresses through the supply chain, affecting production directly (Lixinyu, 2019; Zhanhai & Zhipeng, 2019). Supply chain disruption strategies in diversification and substitution are complex supply chain challenges because; of uncertainty, dependence on suppliers, difficulty in measuring risks, and policies in mitigation regarding pricing on supply and demand. Supply chain issues frequently disrupt manufacturing coordination with suppliers (Choi, 2020; Lin et al., 2021). The Covid-19 pandemic has disrupted supply chain resilience and impacted potential company risks (Lin et al., 2021; Todo & Inoue, 2021). Mitigation strategies on the supply chain significantly impact the continuity of supply and company profits (Golmohammadi & Hassini, 2020). Diversification and substitution are alternative supply chain strategies in developing supply contingency plans. Alternative supply chain strategies are expected to boost product innovation, competitiveness, and production efficiency (Parola, Satta, Buratti, & Vitellaro, 2021). Supply chain disruption is a critical mitigation strategy for ensuring supply chain operations' effectiveness, and an alternative strategy is a must-have option for a business and an essential consideration in its implementation (Moosavi et al., 2022; van Balen, Haezendonck, & Verbeke, 2021). Supply chain resilience is a dynamic in business disruptions (Goaill & Al-Hakimi, 2021).

Diversification and substitution strategies are two contingency instruments to overcome supply chain disruption, minimize risk, and overcome the need to substitute raw materials more efficiently. In supply chain uncertainty, strategic continuity is expected to boost the company's performance (Oh, Moon, & Zhong, 2020). In order to keep production effective and efficient, management strategies need to find a way to make uncertainty in the supply chain and sustainability work together in a beneficial way (Malik & Kim, 2020). Diversification and substitution strategies have disadvantages, such as requiring time to adjust new raw materials, changes in the production process, and requires resources with new competencies. This situation can potentially reduce profits from long-term cooperation with certain suppliers. Bridging supply chain disruptions with potential losses due to increased costs is a significant obstacle and weak for companies (Lin et al., 2021; Zhanhai & Zhipeng, 2019). A supply chain comprises a complex and a top concern for businesses to obtain a competitive advantage (Deep & Dani, 2010; Gurralla & Hariga, 2022; Srivastava, Vyas, & Gurtu, 2022).

Suppose the replacement product is low-quality or does not meet specifications. Supply chain policies must be adjusted to avoid worsening production issues (Shahed, Azeem, Ali, & Moktadir, 2021). Diversification and substitution strategies in the supply chain include cost-benefit analysis, supply availability analysis, and replacement products. Product quality analysis to ensure that materials are equal to or better than the original material. Implementation time frame analysis to evaluate how long it will take to find alternative suppliers. All considerations in the analysis of the domestic supply chain should receive support or development in an effective structure in the form of government policies (Liu & Zhang, 2021; Wu, Gong, Peng, Yan, & Wu, 2020).

Previously, the research described the following COVID-19 pandemic strategies: production, supply chain modification, and government intervention (Moosavi et al., 2022). Supply chain disruption also encourages optimizing substitution product utilization with partnerships (Wu et al., 2020) and government intervention through subsidies (Ma, 2022). Anticipation resilience is to deal with unexpected and unplanned negative situations (Orlando et al., 2022). Furthermore, to generate new solutions. Furthermore, researchers see no definitive parameter model related to the balance of supply and demand on the availability of raw materials. The gap in alternative diversification and substitution strategies in the supply chain raises several potentials, such as; higher costs, possible mismatched quality, supply uncertainty, transition-implementation costs and times, mitigation strategies, and inclusive policies. The objectives of this study are essential in overcoming supply chain disruptions and gaps in diversification and substitution strategies in order to support the sustainability of domestic production activities is the critical attribute and is a challenge in maintaining

supply chain resilience (Chatterjee & Chaudhuri, 2022; Karmaker et al., 2021; Moosavi et al., 2022; Sharifi, Khavarian-Garmsir, & Kummitha, 2021).

A specific topic discussed in this research is strategy choice as a contingency action in complex supply chain situations due to scarcity and heavy dependence on imports (Weber, 2021; Zheng et al., 2021). In diversification (Alshamsi, Pinheiro, & Hidalgo, 2018; Chemirbayeva, Malgarayeva, & Azamatova, 2020; Zghurska et al., 2019) and substitution (Anar et al., 2020; Baloch & Gzara, 2020; Monardo, 2021; Shor, Kalashnikov, Klochikhin, Shvetsova, & Novikov, 2019; Tsao & Raj, 2020; Wu et al., 2020; Zhanhai & Zhipeng, 2019). According to previous research, the COVID-19 pandemic has disrupted supply chains, resulting in significant profit loss and the threat of future supply (Weber, 2021; Zheng et al., 2021). The local policy encourages manufacturing firms to build a hub supply chain structure by involving integrated partners through inclusive supply chain diversification and substitution. The analysis in this article has important implications for business continuity. The rest of the article is structured as follows: first, present and discuss the results of the interviews; second, explain the study's implications and suggest future research pathways.

## 1. Literature Backgrounds and Hypothesis.

### 2.1 Theoretical and Practical in Supply Chain Management

In this paper, the research explores the theory. It focuses on the concept of interrelationships to generate alternative solutions as decisions. The inevitable environmental changes can only be overcome by applying management theory, which is the company's leading (Akyuz & Gursoy, 2020; Zghurska et al., 2019). The complexity theory is a step toward effectively adapting to unforeseen change through strategic action, recognizing potential opportunities and challenges while maintaining a competitive advantage. This step can be accomplished by applying complexity theory (see also: M.S. Al-Ashhab, 2022; Tokman, Richey, & Deitz, 2016). The characteristics of change can be combined with the theory of contingency to achieve the expected goals when complex and dynamic conditions necessitate the use of alternative strategies by businesses (Oh et al., 2020).

This concept is reinforced by efficiency-based reasons for diversification (Besanko, D., Dranove, 2013) of raw material related to the economic scope and industry dynamics of globalization, uncertainty, and business risk (Thompson, Peteraf, Gamble, & Strickland, 2011). Supply chain management practices are constantly changing, and how to bridge the gap and explain how to structure and manage supply chains between current and theoretical practices (Halldorsson, Kotzab, Mikkola, & Skjøtt-Larsen, 2007). Supply chain management "best practice" integrates all supply chain members' conditions into a conducive "contract" relationship (French, Knox, & Gekoski, 1992). Theoretical and "best practice" backgrounds are used in research and can help researchers understand the research question and topic (Akyuz & Gursoy, 2020).

The concept of strategic practice in the supply chain will assist researchers in identifying relevant availability related to stability, access, and benefits for manufacturing companies. The study aims to investigate alternative solutions to supply chain disruptions, global economic uncertainty, and domestic economic instability. Furthermore, the supply chain is operating to develop practical approaches for managing significant supply chains under COVID-19 in various disruption situations (Moosavi et al., 2022; Oh et al., 2020; Wang et al., 2022; Weber, 2021).

Table 2.1

### Supply Chain Management: Diversification and Substitution Relations

Theory/References View's	Supply chain management related to diversification and substitution applications
<b>Contingency Theory (also known as Situation Theory, Adaptable Theory)</b> (Hamann, 2017) and (Stonebraker & Afifi, 2004; Zhou & Liu, 2013)	Contingencies affected by external and internal factors; situations that would require decision-making in order to keep industrial production and as variables determining the effectiveness and continuity

<b>Strategic Choice Theory:</b> (Kayvan Miri Lavassani, 2010) <b>And</b> (Zhanhai & Zhipeng, 2019)	As a centric strategy directing choice on a new supply chain inclusive structure (substitution) strategic in pricing
<b>Complexity Theory</b> (Halldorsson et al., 2007) <b>and</b> (Yi Tian, Ma, & Lou, 2018)	Inclusive supply chain structure decisions are best practices for unpredictable and chaotic phenomena.

## 2.2 *Supply Chain Disruption – Covid-19 Pandemic Outbreak*

Disruptions in supply chain operations have constantly changed and become the new normal. The COVID-19 pandemic has severe consequences and has become a significant concern for manufacturing firms from various organizations, governments, policymakers, and researchers (Oh et al., 2020; Xiangyu Tian, Yang, Huang, & Fang, 2022; Weber, 2021). Supply chain-disrupted is interesting because it has a social and economic global impact (Bhatti et al., 2021; Guo et al., 2021).

Supply chain strategies in production, supply chain modification, and government intervention (Moosavi et al., 2022) have encouraged the optimization of substitution product utilization with partnerships (Wu et al., 2020) through subsidies (Ma, 2022) as resilience to deal with unexpected and unplanned negative situations (Orlando et al., 2022). Supply chain disruptions have significantly negatively impacted some manufacturing companies in Indonesia due to the COVID-19 pandemic and Russia's invasion of Ukraine. Fears it will have a devastating impact in the face of the threat of stagflation (Abbas & Lan, 2020; Bhatti et al., 2021; Furceri et al., 2022).

The primary objective of this research is to find a way out of the uncertainty of the import supply chain, which directly affects domestic industrial productivity lead time and cycle time. Furthermore, in order to address the state-of-the-art analysis of theoretical and practical under the ongoing covid pandemic and supply chain impacts of Russia's invasion of Ukraine. The researcher aims to address the following research questions:

**RQ-1** How do manufacturing firms interact with supply-side disruption?

**RQ-2** What driving forces the supply chain into economic pain situation?

## 2.3 *Diversification and substitution resilience*

A global economic perspective is an insight into the supply chain disruption strategy to identify the best choice or structure amidst uncertainty (Golmohammadi & Hassini, 2020; Zghurska et al., 2019). Diversification and substitution are concepts proposed by researchers to maintain the resilience of domestic supply chains in the face of disruption and the threat of a global economic downturn.

The concept of a diversification strategy and substitution inventory levels are directly affected by the availability and profitability that manufacturers can still obtain from finished goods' prices (Anar et al., 2020; Chemirbayeva et al., 2020; Lin et al., 2021; Tsao & Raj, 2020).

## 2.4 *Model Description*

Uncertainty mitigation initiates at the supply chain level, directly impacting the production process and leading to the failure of on-time delivery (Lixinyu, 2019). The objective of the model that has been proposed is to identify a tactic that can be used to deal with problems in the supply chain as well as instability in the global economy. Both of these things directly impact the domestic supply chains, which are the networks that connect producers and suppliers. When there are breaks in the supply chain, it is possible to suggest developing alternative strategies to deal with the situation. These strategies can help mitigate the effects of the disruptions. These ideas could begin with designing and constructing a raw material center as the first step toward controlling a sustainable supply chain. Sustainably managing a supply chain can be achieved by doing this as an option. This concept can also control the sustainability of the supply chain. In these conditions, the proposed object model is the development of alternative strategic solutions in conditions.

Decision variables influence the formulation of a supply chain-disrupted strategy. The model's goal is efficiency, effectiveness, and growth while aiding business sectors such as small and medium enterprises and optimizing the domestic supply chain in "relationship integration" sustainability.

## 2. Materials and Methods

The method used by the researcher in this study was qualitative. Qualitative methods can enrich the researcher on data related to respondents' perception of the conditions or situations and answer research questions not obtained from quantitative research (Busetto, Wick, & Gumbinger, 2020; Hu, Asistido, & Villanueva, 2021). Qualitative methods can assist researchers in collecting data through perceptions of the advantages of using the qualitative method for researchers (Busetto et al., 2020; Savela, 2018), including:

- understanding the reality of research objects,
- the context of the research problem, and
- obtaining the accuracy and relevance of measurable data for analytical materials.

Researchers are interested in this research because it is vital to understand Indonesia's manufacturing resilience in a supply chain disrupted by the COVID-19 pandemic and the Russian-Ukrainian invasion. The object of this study is of interest to researchers because economic performance influences sentiment toward Indonesia's manufacturing performance. As a result, qualitative studies are an acceptable way to see and hear directly from Indonesian manufacturers. The researcher goes through the following processes: (1) observation: defining the problem based on the concept, selecting participants based on the object of study, and (2) in-depth interview: designing the interview material with generated and selective questions.

Qualitative design cannot be identified as formal data because it is not documented in the article and does not compare the current problem with different methods. As a result, the researcher modified it into a concept (Broom, 2021). Even though the qualitative design is evidence-based, it cannot be used in place of quality results (Ricci et al., 2019). Researchers overcome the limitations of qualitative design by comparing all interview results to assess participants' objectivity concerning the research objectives. The legitimacy of participants and insights about the qualitative method are the subjective reliability of the qualitative method in this study (Al, 2019).

This study's context is supply chain management practices and theory. The supply chain is a component of the decision-making and implementation of a logistics, information, and money flow process that aims to meet the end customer's needs (Vorst, 2004). The research was conducted on several industries that experienced difficulties in the adequacy of raw materials in the continuity of production due to continuous supply through imports. In this study, supply chain management practices were adopted as a strategic response to the changing paradigm shift by adopting a complex and dynamic process-oriented approach (Akyuz & Gursoy, 2020).

The study was conducted between 1 March 2022 and 30 June 2022. Respondents of this research were industry organizations, manufacturers, government officials, and academics, with a limited number of n=19 participants. Respondents were chosen based on their operational reliance on the supply chain, associations supporting domestic supply chains, governments implementing industrial and economic stability policies, and academics interested in supply chain management (Malagon-maldonado, 2014).

The researcher required primary and secondary data because they assist in the analysis framework. Transcripts of participant interviews were used as primary data. In contrast, research journals and survey institution analysis results were used as secondary data. The researcher required primary and secondary data because they aid in the analysis framework. Transcripts of participant interviews served as primary data, while research journals and survey institution analysis results served as secondary data. The research data was obtained through interviews with each participant and could be collected for 60 days. The data gathered was adequate for analysis materials to understand supply chain management in the context of disruption and the global economy. It focused on SCM perspectives and paradigms related to the complex situation and discussed alternative solutions to sustainable strategies.

The supply chain management relationship was an excellent concept for assisting researchers in understanding the research context (Akyuz & Gursoy, 2020) and answering research questions. The analysis results strengthen the researchers' arguments for overcoming supply chain problems. The researcher faced challenges because they did not quantify the efficiency and operational effectiveness level regarding access and ease of obtaining raw materials.

The theme of the data analysis results was the decrease in margins due to supply disruption caused by a series of pandemics and the impact of the global economy. The domestic economy by the government in the

form of subsidies and non-subsidies has not positively impacted manufacturing. The theme of the analysis supports the research proposing that alternative strategies are highly recommended so that manufacturing companies can continue to meet the needs of production capacity and sustainability

### 3. Result and Discussion

This research first looks at how the COVID-19 outbreak and the Russia-Ukraine war caused disruptions in the supply chain, worsened the global economy, and hurt several supply chains of Indonesian manufacturers. Manufacturers face unavoidable difficulties and the rising cost of production inputs (cost-push inflation). In the case of Indonesian manufacturing, production costs have risen. However, producers have not fully charged consumers because the purchasing power remains low. Such a situation hugely pressures producers because they must reduce profit margins, which cannot be sustained indefinitely. In order to maintain people's purchasing power in the face of external and internal instability, manufacturers are pressuring profit margins. The supply side significantly impacts the ability to control inflation. Sources of domestic growth that have resulted in the weakening of government economic growth priority policies are essential and inclusive in the heavily affected sectors. Manufacturers must begin developing domestic supply chains by changing the government's subsidy policy and developing a model to make domestic entrepreneurs more cost-effective.

The researcher systematized and analyzed the data interviews and summarized the result as shown below:

**Table 4. 1**  
**The theme of Supply Chain Disruption – Challenges**

Industry - Manufacturer	Ref.	The Theme of Supply Chain Disruption-Related Challenges
Food and Beverage	01-F&B (2 persons)	The uncertain dynamic, price increase, global economy, alternative formula, import substitution
Textile & Garment	02-TEX (2 persons)	Shift from and the invasion of imported goods, locally produced, import policy and market share
Association of Manufacturers	03-ASS (3 persons)	Purchasing power, burdening, and production cycle
Ministry of Industry	04-GOV (2 persons)	Global inflation, substitution, and optimization
Food and Agro	05-F&A (2 persons)	Inclusive supply chain, SMEs
Chemical and Pharmaceutical	06- CHE (1 person)	Imported substitution, local materials, industrial structure – national industry (gap)
Filament Fiber and Yarn Producers	07-FIL (1 person)	People's consumption and price increase
Academician	08-ACA (2 persons)	Supply bottlenecks, change in demand, higher inflation, delivery time and shortages, sound policy, policy polarization
CEOs and General Managers	09-CEO (4 persons)	Availability of raw materials, price increases, consumer demand

The pandemic significantly impacts the supply chain, and trends change significantly (Xiangyu Tian et al., 2022). Due to widespread downtime, this is almost always the case with all raw material requirements. The manufacturer firms that depend on imported raw materials must stop working. This situation has caused significant difficulties in the production sector's lack of supply and availability of raw materials and significantly impacted price increases, undoubtedly burdening industrial man. As reported (01-F&B):

*"...The uncertain state of the global economy is causing almost all commodity prices, including those for raw materials, to rise. The persistent inflationary pressures that the rupiah faces compared to the dollar in the United States make this problem even more severe...."*

It is difficult for manufacturers to pass on increases in the cost of raw materials to consumers by increasing the price of finished goods. This will cause a crisis in people's living expenses and prevent them from recovering their purchasing power. One interview (03-ASS) specified:

*".. even if it goes up, we try not to be too high because we also have to look at people's purchasing power."*

Furthermore, according to interviews (07-FIL) and (01-F&B) pointed:

*"...the last three years, there has begun to shift from imported cotton fiber raw materials to locally produced polyester and rayon. People's consumption is starting to feel down because now what comes first is food shopping, the price of which has gone up. What we need now is import policy support to keep the domestic market from the invasion of imported goods."*

*"The cost of production is up 10-15 percent in the last six months. It has to raise prices again, but much wait and see and choose to press the margins. We are worried that if prices increase again, people's purchasing power will weaken, and demand will be sluggish."*

Commodity prices continue to rise, and inflation and the poverty line will undoubtedly rise. Government policies should govern this implementation because it affects the currency's stability. How is the policy with virtue? Interviewees (04-GOV and 05-F&A) commented:

*" The government promotes domestic products and import substitution to lower the high pressure on global inflation. The industrial sector must continually optimize this."*

*"This import substitution is expected not only to spur an increase in consumption of raw materials and local auxiliary materials but also spur the national industry to fill the gaps in the industrial structure that has been filled by importing"*

*"We must have an alternative formula. If this raw material is expensive, replace it with another one. The industry must map and prepare reserves."*

Import inflation causes cost-push to outweigh demand-pull, forcing the government to incur cost-intensive costs such as subsidies while boosting economic growth (Bhatti et al., 2021; Furceri et al., 2022; Jongwanich et al., 2019; Sahoo & Sethi, 2018). Manufacturing in Indonesia should start moving away from this condition and develop domestic supply chains, as well as initiate to mitigate costs of raw materials through substitution and diversification. Building a domestic supply chain resilience as two interviewees (05-F&A and 01-F&B) specified:

*"Some companies have carried out inclusive supply chains involving MSMEs, but only their initiatives. Suppose it is made more concrete, consistent, and monitored which companies are already running and which are not. In that case, there is peer pressure to realize this."*

*"Import substitution, especially raw materials, is still a serious challenge for the industry in 2022. In the upstream industry, the production of some commodities such as milk, soybeans, sugar, and corn is still not moving in numbers from years ago. "The production is still the same as in previous years, and the need for industrial raw materials increases as the industry increases. The challenges of high raw material prices and energy costs will continue in 2022."*

Researchers are considering developing domestic supply chains by integrating inclusive raw material centralization structures coordinated through planning between manufacturers and supplier businesses. In general, the findings of the research results are that manufacturers in Indonesia must be ready to diversify and substitute raw materials for production. Government policies on the dependence on imported raw materials must find solutions with new policies by requiring raw materials with certain restrictions to use local content. This policy will drive new businesses to provide raw materials to certain manufacturers:

- Intensification (Guo et al., 2021; Mishra, 2017; Tan, Lyman, & Wisner, 2002; Zhanhai & Zhipeng, 2019) and extensification (Baloch & Gzara, 2020; Jain & Foley, 2002; Mishra, 2017; Zeppetella, Gebennini, Grassi, & Rimini, 2017) of policies in the supply chain of raw materials based on local content are necessary for manufacturers.
- The government must strive to become domestic inflation due to the impact of global inflation, which has led to stagflation (Indonesia's inflation in June 2022 = 4.35% is at its highest level since 2017 and above the target of the 2022 State Budget) (Baloch & Gzara, 2020; Sahoo & Sethi, 2018; Zhang, Zhang, & Yao, 2020).

The COVID-19 pandemic is causing disruptions in internal and external supply chains. The industry is forced to make long-term strategic decisions considering the possibility of becoming dependent on imported supplies (Monardo, 2021; Weber, 2021; Zheng et al., 2021). The findings and analysis are closely related to strategic choice, contingency, and complexity theories. As a result, alternative solutions models such as diversification and substitution are strategic perspectives in managing the supply chain: both theoretically and practically.

Diversification and substitution strategies are implemented in the supply chains of some businesses that rely on imported materials. These businesses have also put theory and practice into the process. Although there is still a perception of a limited supply of imported materials, there is no question that this strategy is the most effective way to maintain production levels. This is because diversification and substitution strategies in the supply chain enable the production of a greater variety of goods. Additionally, stock availability and the preservation of profit potential are the primary areas of focus to ensure the company's survival during this challenging period (Golmohammadi & Hassini, 2020; Lin et al., 2021).

New ideas for production facilities and infrastructure, strategies for making production more environmentally friendly, and policies implemented by the government all make it easier to overcome the challenges associated with putting diversification and substitution into practice. Mitigation to parallel diversification by managing risk (Chod, Trichakis, & Tsoukalas, 2019). The most vital point is to build a domestic supply chain instrument and design a policy mechanism.

According to the research findings, the situation confronting manufacturers as an external threat is an uncertain situation that directly impacts the operational continuity of the company's productivity (Guo et al., 2021). The implications have an immediate impact on the domestic industry. Consequently, the local supply chain will have a new structure that is more inclusive, centralized, and integrated, which will increase production flexibility (Malik & Kim, 2020)

#### **4. Conclusion**

Reducing consumption and boosting production is challenging (van Wyk et al., 2021). The domestic impact on the globalization landscape is powerful on supply chains. The long-standing problem of supply chain disruption in operations, about which scholars have conducted various studies. Due to the Covid-19 pandemic's series of disruptions, the problem of raw material supply chains is becoming a "disaster" for domestic manufacturers in Indonesia (Oh et al., 2020; Xiangyu Tian et al., 2022; Weber, 2021). The stagflation of the global economy due to the geopolitics of the Russia-Ukraine war and the unpredictable stability of the domestic economy (Abbas & Lan, 2020; Bhatti et al., 2021; Furceri et al., 2022; Jongwanich et al., 2019; Sahoo & Sethi, 2018).

From a strategic view, a researcher sees opportunities and potentials so that they become part of alternative action strategies as solutions, such as diversifying and substituting raw materials obtained locally (Akyuz & Gursay, 2020). The raw material supply chain crisis is an external challenge because dependence on



imported supplies is difficult to avoid. Manufacturers must be wise in exploring internal potential by building inclusive domestic supply chain stability security involving small and medium enterprises (Chemirbayeva et al., 2020). Building material centers manage this new structure to facilitate access to raw materials with price standards, subsidies, and non-subsidies as supply chain protection (see also: Huang, Fan, & Wang, 2020; Liu & Zhang, 2021; Ma, 2022; Yu, Tang, Sodhi, & Knuckles, 2020).

Domestic raw material supply chains should be identified on the needs of manufacturers, whether raw materials are in the form of diversification or substitution (Huang et al., 2020; Yu et al., 2020). The government's balanced, inclusive, sustainable, and socially beneficial macroprudential coordination and structural reforms must be strengthened to address supply chain disruptions' raw material shortage. Scarcity necessitates raw material center interoperability and connectivity for affordability and horizontal integration (Huang et al., 2020; Yu et al., 2020; Zeid, Sundaram, Moghaddam, Kamarthi, & Marion, 2019). Manufacturer firms must get out of the situation and avoid becoming "stuck in the middle" due to their inability to control the stability of raw material availability and the price of products offered to customers. Companies should implement alternative strategies with new organizational structures by diversifying and substituting their operations. These initiatives should be led by an inclusive domestic supply chain in partnership with small and medium-sized businesses and integrated through raw material centers (Oh et al., 2020).

The researcher recommends that more research be conducted on the new form of the local supply chain in terms of effectiveness and efficiency to meet manufacturing productivity's operational needs. The implications of the research findings may also encourage the government to impose limits (total domestic content) on local products to reduce dependence on imported supplies. The new domestic supply chain structure will also encourage new suppliers locally. This research shows that integrated supply chain business planning in terms of diversification and substitution is intended to consider the possibility of uncertainty or disruption. It is a costly endeavor to ensure that every nation has adequate food supplies. However, they can be used as a starting point for figuring out how to manage the supply chain in a relevant, efficient, and effective way. Manufacturers should express the following concerning domestic and international supply chain problems and stagflation. First, factories need to build centers for raw materials so that small and medium enterprises can join the new supply chain structure and have more power. Second, the government sets up a system of subsidies and incentives to encourage the use of new supply chain structures in planning for industrial production. Third, domestic macroeconomic stability and recovery must be preserved via more flexible monetary and fiscal policies geared toward domestic productivity.

Developing a manufacturing production base is a formidable obstacle for a nation, which involves encouraging the consolidation of expansion zone structures, such as domestic component levels. This study does not address cost optimization, which aims to maximize the company's revenue while measuring customer satisfaction with products resulting from raw material diversification and substitution. In the next phase of the study, it was suggested that the following issues be addressed in greater depth. First, additional scenario analysis research is conducted to mitigate alternative solution strategies such as diversification and substitution. The structure of local supply chains is integrated with raw material hubs, small and medium enterprises, and manufacturers to calculate efficiency and effectiveness. Second, the upstream-downstream supply chain is analyzed to determine its efficiency, value, and effectiveness of the upstream-downstream supply chain. Second, the impact of government policies on the supply chain locally is based on reducing dependency on imported through the supply chain management "5R" formula (correct quantity, quality, time, source, and price). Third, policy polarization is inevitable, and alternative solutions related to domestic supply chains are designed for the long term.

Utilizing the benefits of the global economy as part of the global value chain is a challenge that is also driving the pace of the Indonesian economy, which is based on domestic consumption. So, the policy mix integrates pro-stability to encourage pro-growth. As a result of the expected global economic impact of a global recession, global supply chain conditions remain uncertain and difficult to predict. The industrial ecosystem can become a new locomotive for Indonesian economic growth by identifying ecosystems based on innovation capabilities and production fragmentation. An ecosystem must be built as a production strategy for Indonesia's manufacturing industry based on the state of the domestic supply chain. It is also expected to obtain ecosystem financing to strengthen food reserves and stabilize staples prices through a substitution scheme. Digital ecosystems can potentially reduce production costs while resolving distribution issues.

The researcher argues that sustainability in diversification and subsistence must be achieved by developing technology, regulations, and ecosystems and providing people with additional options when supply is closely tied to quality concerns, commodity sources, processing infrastructure, and investment. In a world where the cost of living is rising at an alarming rate, one objective of sustainability is ensuring that every nation possesses an adequate food supply.

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