



The Great Supply Chain Rewiring and the New Geography of Global Business

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ARTICLE HISTORY

Received	Revised	Accepted	Published
21 June 2026	27 July 2026	18 August 2026	30 September 2026

ABSTRACT

Global supply chains are undergoing a structural reconfiguration as geopolitical fragmentation, technological change, industrial policy, and recurring disruptions challenge production networks traditionally designed around cost efficiency and global specialisation. This conceptual article examines how supply chain rewiring is reshaping the geography of global business through friendshoring, reshoring, regionalisation, supplier diversification, and selective localisation. The analysis shows that these strategies do not represent a uniform retreat from globalisation. Instead, international production is evolving towards more selective and geographically distributed networks in which firms must balance efficiency, resilience, political exposure, technological capability, and access to specialised suppliers. Diversification can strengthen resilience, but its effectiveness depends on whether alternative locations provide genuinely independent production capacity rather than reproducing common upstream vulnerabilities. Technology further changes production geography by enabling greater coordination across dispersed networks while automation can improve the economic feasibility of relocating selected activities. The article proposes a strategic approach centred on selective diversification, regional production portfolios, digital intelligence, capability-based industrial development, and continuous network recalibration. Rather than replacing global integration with economic isolation, effective supply chain rewiring requires organisations to preserve valuable international capabilities while reducing critical dependencies and developing credible alternatives. This perspective positions supply chain geography as a dynamic strategic capability through which firms can strengthen resilience, maintain competitiveness, and adapt systematically to an increasingly fragmented global business environment.

Keywords: Rewiring, Geopolitics, Regionalisation, Resilience, Interdependence

HOW TO CITE

Author1, A. A., & Author2, B. B. (20XX). Title of the article.
International Journal of Business and Management Advancement,
X(X), xx–xx. <https://doi.org/10.1111/ijbma.12345>

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1. INTRODUCTION

The geography of global business is being redrawn as firms reconsider where, how, and with whom they source, manufacture, invest, and distribute across international markets. Decisions once dominated by production costs, economies of scale, and access to specialised suppliers are increasingly influenced by geopolitical exposure, trade restrictions, technological capability, industrial policy, and the strategic need for supply chain resilience. Ando et al., (2026) provide evidence of increasing political friendshoring and recent progress in reshoring across major production hubs, although these patterns differ substantially between America, Asia, and Europe. Faber et al., (2025) similarly demonstrate that uncertainty can encourage production to return to high-income economies when automation makes such relocation economically feasible. Ahn and Tan (2025) further establish that diversified sourcing can reduce vulnerability to country-specific supply shocks, although greater resilience may require firms to accept higher sourcing costs and efficiency losses. These developments indicate that international business is not simply retreating from globalisation. Instead, corporate networks are undergoing a profound geographical reconfiguration in which efficiency remains important but must increasingly coexist with resilience, political compatibility, technological security, and continuity of supply. Strategic warehouse and logistics research also links coordinated supply chain capability with stronger organisational performance under changing business conditions (Abdullah et al., 2020).

Geopolitical fragmentation has become one of the most powerful forces accelerating this transformation. Trade disputes, strategic rivalry, tariffs, export controls, investment screening, industrial subsidies, and concerns surrounding critical technologies have changed the risk calculations underlying international sourcing and production decisions. Ando et al., (2026) find that political friendshoring has strengthened across international production networks, particularly within Factory America, while the pattern is considerably weaker within Factory Asia. Such differences demonstrate that supply chain rewiring does not follow a uniform geographical trajectory. Firms must interpret geopolitical exposure alongside existing supplier relationships, production capabilities, market access, and the economic costs associated with relocation. Ahn and Tan (2025) likewise demonstrate that supply chains cannot be reorganised immediately because rigidities within goods, labour, and local factor markets make network adjustment costly and time consuming. This creates a fundamental strategic tension. Concentrated international networks can generate significant efficiency advantages, but excessive dependence on politically or economically vulnerable locations can expose firms to severe disruption. Contemporary supply chain strategy must therefore determine how much geographical concentration remains economically desirable and how much diversification is necessary to protect continuity under increasingly uncertain international conditions. Managerial judgement under uncertainty is similarly shaped by how decision makers perceive and evaluate organisational risk (Yusof & Razali, 2020).

Diversification has consequently emerged as a central mechanism through which firms can redesign global networks without abandoning the advantages of international production. Yusof et al., (2025) emphasise the importance of innovative logistics strategies for maintaining continuity under disruption. Rather than transferring entire operations back to domestic markets, organisations can distribute sourcing and manufacturing activities across multiple countries to reduce dependence on individual suppliers and locations. Ahn and Tan (2025) show that geographically diversified supply chains can strengthen resilience by reducing exposure to exporter specific shocks, particularly when

diversification targets products that are highly exposed, positioned upstream, or difficult to replace. However, their findings also demonstrate that resilience carries an efficiency cost because alternative suppliers may be more expensive than established sources. Faber et al., (2025) provide a complementary perspective by finding evidence of reshoring under uncertainty when automation supports its economic feasibility, while finding considerably weaker evidence for diversification and nearshoring within their empirical setting. These contrasting findings illustrate why supply chain rewiring cannot be reduced to a single strategy such as reshoring, nearshoring, or friendshoring. Different industries and firms face different combinations of cost, technology, supplier capability, political exposure, and market requirements. The emerging geography of business is therefore likely to consist of multiple interconnected production locations selected according to differentiated strategic purposes rather than one universally preferred geographical configuration. Contemporary logistics research emphasises innovative strategies for addressing disruption while maintaining sustainable growth and operational continuity.

The redistribution of international production is also creating a new competitive landscape for developing economies seeking greater participation in global value chains. As established networks are reconsidered, countries capable of providing manufacturing capacity, infrastructure, skilled labour, technological competence, institutional reliability, and international connectivity may capture investment that would previously have remained concentrated in traditional production centres. Pietrobelli et al., (2026) argue that current global value chain reconfiguration creates both risks and opportunities for developing economies, with new export possibilities emerging across low and high technology industries as production relationships change. Their analysis emphasises that benefiting from this transformation requires continued investment in production and innovation capabilities rather than reliance on low production costs alone. The broader industrial landscape reinforces this shift. Pietrobelli et al., (2026) identify the reconfiguration of global value chains as a major structural transformation and anticipates that expanding productive capabilities across Southern Asia, Africa, and other parts of the Global South will increasingly influence the geography of economic activity. Supply chain rewiring therefore has consequences extending far beyond corporate risk management. It can redirect foreign investment, stimulate new industrial clusters, alter trade corridors, strengthen regional production ecosystems, and change the relative strategic importance of countries within the international economy. Innovation-driven development also depends on the alignment of technological capability, organisational processes, and strategic priorities (Yusof & Salleh, 2021).

Technology further complicates this geographical transformation by changing the economic conditions under which production locations become competitive. Automation can reduce the importance of labour cost differentials, while digital coordination can improve visibility and control across geographically dispersed networks. Faber et al., (2025) demonstrate that uncertainty interacts with automation in shaping global value chain decisions, with industrial robots making reshoring economically feasible under particular conditions. This finding suggests that production geography can no longer be understood solely through traditional comparisons of wages, transportation costs, and market proximity. Technological capability increasingly determines whether firms can operate efficiently in alternative locations and whether countries can attract strategically important activities. Pietrobelli et al., (2026) similarly emphasise that production and innovation capabilities are essential if developing economies are to capture opportunities created by changing global value chains. At

the same time, network restructuring remains constrained by the difficulty of replacing established suppliers, skills, infrastructure, and industrial ecosystems. Ahn and Tan (2025) show that trade network rigidities prevent immediate adjustment following shocks, reinforcing the importance of considering transition costs when designing more resilient supply chains. The new geography of global business will therefore favour locations capable of combining technological readiness with supplier depth, infrastructure quality, workforce capability, institutional stability, and effective connectivity to regional and international markets. Technology adoption can support business growth, innovation, and digital sustainability when it is aligned with organisational capability and long-term priorities (Yusof, 2025a).

What is emerging is not a simple reversal of globalisation, but a more selective and strategically differentiated architecture of international business. Companies continue to benefit from cross-border specialisation and global market access, yet the location of critical activities is increasingly being evaluated against a wider portfolio of risks and strategic priorities. Ando et al., (2026) demonstrate that friendshoring, nearshoring, and reshoring are evolving differently across major international production hubs, confirming that global network restructuring is neither uniform nor linear. Ahn and Tan (2025) further show that diversification involves a fundamental resilience and efficiency tradeoff, meaning that stronger supply security cannot be pursued without recognising its economic consequences. Pietrobelli et al., (2026) add that the resulting reconfiguration can redistribute industrial opportunities across countries as firms reassess production and investment patterns. The strategic challenge facing contemporary business is therefore no longer simply to identify the lowest cost location. It is to construct geographical networks capable of remaining competitive when political relationships, trade rules, technologies, and supply conditions can change rapidly. Supply chain rewiring consequently represents a fundamental reordering of global business geography, with future competitive advantage increasingly determined by how effectively firms balance efficiency, resilience, diversification, technological capability, market access, and geopolitical exposure. Green innovation research suggests that sustainability-oriented innovation can contribute to competitive advantage when embedded within coherent organisational strategy (Jamaludin et al., 2024).

2. LITERATURE REVIEW

The restructuring of international supply chains has generated a substantial body of research examining how geopolitical fragmentation, resilience requirements, technological change, industrial policy, and shifting investment patterns are altering the geography of global business. Rather than documenting a wholesale retreat from international production, recent evidence points towards a more complex process of reconfiguration. Gopinath et al., (2025) identify growing fragmentation in trade and investment between geopolitically distant economies, while also demonstrating the increasing importance of connector countries positioned between competing blocs. Ahn and Tan (2025) establish that geographical diversification can strengthen resilience against adverse trade shocks, although the benefits are accompanied by efficiency costs arising from trade network rigidities. Faber et al., (2025) provide a different perspective by showing that uncertainty can encourage reshoring when automation makes relocation economically feasible, but find considerably weaker evidence of systematic nearshoring or diversification. Doan et al., (2025) subsequently demonstrate that firms may respond through incremental diversification rather than complete relocation, particularly across China and ASEAN. Collectively, these findings indicate that supply

chain rewiring involves multiple strategic responses rather than a uniform movement towards localisation. Five interconnected streams are especially relevant: geopolitical fragmentation, diversification and resilience, regional production reconfiguration, technological transformation, and the changing geography of global value creation. Empirical work in Malaysia's automotive sector demonstrates how coordinated organisational capabilities and innovation practices can support performance in complex production ecosystems (Yusof et al., 2024).

2.1 Geopolitical Fragmentation Reshaping Global Supply Chain Architecture

Geopolitical considerations have become increasingly influential in determining the architecture of international supply chains. Commercial relationships that were historically organised primarily around comparative advantage, production efficiency, supplier expertise, and market access are now being evaluated alongside political alignment and national security concerns. Gopinath et al., (2025) provide compelling empirical evidence that trade, foreign direct investment, and portfolio flows between geopolitically distant blocs have declined relative to flows between politically aligned economies. Caldara and Iacoviello (2022) establish the broader importance of geopolitical risk by demonstrating that geopolitical shocks generate measurable economic and financial consequences, providing an important foundation for understanding why firms increasingly incorporate political exposure into international decisions. Ando et al., (2026) extend this debate by examining friendshoring, nearshoring, and reshoring simultaneously across Factory America, Factory Asia, and Factory Europe. Their results reveal increasing political friendshoring and recent progress in reshoring, but also show that these developments differ considerably across major production hubs. This variation is strategically significant because it challenges the assumption that geopolitical tension automatically produces uniform relocation towards politically aligned or geographically proximate countries. Instead, firms appear to weigh geopolitical exposure against established supplier ecosystems, sunk investment, market access, technological capability, and relocation costs. Supply chain geography is consequently becoming politically conditioned without becoming entirely subordinate to geopolitical alignment.

The implications of geopolitical fragmentation extend beyond bilateral trade relationships because changes in one part of an international production network can alter sourcing, investment, inventory, financing, and supplier relationships throughout the wider system. Recent evidence indicates that geopolitical risk can weaken supply chain resilience through higher inventory costs and reduced trade credit, demonstrating that political uncertainty affects both physical and financial dimensions of supply networks. Doan et al., (2025) show that Japanese multinational enterprises exposed to geopolitical risk in China tend to expand sourcing and production towards ASEAN while retaining existing Chinese operations, suggesting that risk mitigation frequently occurs through portfolio expansion rather than complete withdrawal. Gopinath et al., (2025) similarly identify the emergence of connector economies that receive production and investment as firms respond to trade restrictions between competing blocs. These patterns demonstrate that fragmentation can simultaneously weaken some economic relationships while strengthening others. The result is not necessarily a smaller international production system, but a differently connected one. Strategic supply chain design must therefore consider geopolitical distance, regulatory compatibility, exposure to trade restrictions, and the possibility that intermediary countries may become increasingly important bridges within fragmented global networks. Political geography is consequently becoming inseparable from the commercial geography of international business.

2.2 Diversification Resilience Shaping Global Supply Chain Efficiency

Supply chain diversification has emerged as a prominent response to concentrated geographical exposure because organisations increasingly recognise that extreme sourcing efficiency can create substantial vulnerability when production depends heavily on a limited number of countries or suppliers. Ahn and Tan (2025) develop a multi-country and multi-sector framework demonstrating that diversified import sourcing can reduce the effects of adverse trade shocks. Their findings nevertheless reveal a fundamental tradeoff because diversification can increase resilience while sacrificing efficiency when alternative suppliers are more expensive or less productive. Doan et al., (2025) provide firm-level evidence consistent with this strategic logic. Japanese multinational firms with greater geopolitical exposure to China increase diversification towards ASEAN economies, particularly when they depend heavily on Chinese imported inputs or maintain significant production operations there. However, diversification does not normally involve abandoning established Chinese production networks. Firms instead add geographical alternatives while retaining valuable existing capabilities. This behaviour indicates that resilience is increasingly constructed through redundancy and optionality rather than wholesale relocation. The literature therefore challenges the traditional assumption that the most efficient supply chain is necessarily the strategically strongest. Contemporary supply chain design increasingly requires organisations to determine an acceptable balance between cost efficiency, supplier concentration, geographical exposure, switching capability, and continuity under disruption.

The resilience benefits of diversification are also conditioned by the practical difficulty of reconfiguring established production relationships. Ahn and Tan (2025) emphasise that frictions within goods, labour, and local factor markets prevent supply chains from adjusting immediately after shocks. Faber et al., (2025) similarly demonstrate that uncertainty alone does not automatically generate widespread diversification or nearshoring. Their evidence indicates that reshoring becomes more likely when automation changes the economic feasibility of domestic production, revealing how location decisions remain constrained by underlying production economics (Yusof et al., 2025). Todo (2026) further observes that Asian supply chains remain deeply connected to China despite heightened interest in economic security and diversification. China continues to account for substantial shares of intermediate imports across Asian economies, illustrating the persistence of established supplier relationships and production capabilities. These findings suggest that diversification should be understood as a gradual capability building process rather than an immediate response to political uncertainty. Organisations require alternative suppliers, qualified production capacity, logistics infrastructure, contractual arrangements, technological compatibility, and information visibility before geographic alternatives become operationally credible. Resilience therefore depends not merely on increasing the number of sourcing locations, but on developing alternative nodes capable of maintaining quality, scale, cost competitiveness, and continuity when established supply relationships become disrupted. Warehouse management systems can strengthen supply chain resilience and competitiveness by improving information coordination and operational responsiveness.

2.3 Regionalisation Reshaping Emerging Global Production Network Geography

The geographical restructuring of supply chains is generating new regional configurations in which production remains internationally dispersed but becomes organised around a broader portfolio of strategic locations. Evidence from East and Southeast Asia illustrates this pattern particularly clearly.

Doan et al., (2025) find that Japanese multinational firms respond to rising geopolitical exposure by expanding production and sourcing towards ASEAN economies without undertaking extensive withdrawal from China. Their findings support a model of regional diversification in which established production centres remain important while complementary nodes acquire greater strategic significance. Research on China and ASEAN supply chains similarly shows that industrial relocation can alter the distribution and concentration of supply chain risk, with Vietnam and Thailand becoming increasingly significant in selected manufacturing activities. Gopinath et al., (2025) broaden this perspective by identifying connector countries that increasingly attract production and investment as geopolitical fragmentation encourages firms to reorganise trade around restrictions imposed between competing economic blocs. Such countries can gain strategic importance not simply because they offer lower production costs, but because their trade relationships, political positioning, market access, and industrial capabilities allow them to connect otherwise fragmented commercial networks. Regionalisation therefore represents more than geographical proximity. It reflects the creation of production architectures capable of combining international integration with greater geographical and political flexibility. Experience from global shipping similarly shows that innovation and operational adaptation remain central to competitiveness in international logistics environments (Yusof, 2024).

The emergence of new production nodes does not imply that established manufacturing centres are rapidly losing their importance. Contemporary evidence instead indicates a more gradual redistribution of activities across increasingly multipolar networks. The Global Value Chain Development Report 2025 finds that international production remains highly significant and that globalisation is being reconfigured through regionalisation, digitalisation, and diversification rather than reversed. Baatar et al., (2025) document the continuing importance of major regional hubs within contemporary global value chains, while the broader report identifies growing opportunities for additional economies to participate in changing production networks. Estevadeordal et al., (2025) similarly frame current developments around resilience and reglobalisation, emphasising that the evolution of value chains can create new opportunities rather than simply producing economic fragmentation. Yet the ability of emerging locations to capture these opportunities depends on considerably more than inexpensive labour. Production relocation requires reliable infrastructure, supplier depth, logistics connectivity, institutional quality, workforce capabilities, technological readiness, and access to international markets. Consequently, the new geography of global business is unlikely to consist of a simple transfer of manufacturing from one dominant country to another. It is more likely to develop as a network of specialised regional nodes whose strategic importance reflects their ability to combine cost competitiveness with resilience, connectivity, political accessibility, and industrial capability. Digital adoption has also been associated with stronger growth and resilience among smaller enterprises operating under changing market conditions (Yusof, 2025b).

2.4 Technology Automation Reshaping Global Production Location Economics

Technological capability increasingly influences where production can be located because automation and digitalisation are changing the traditional cost structures underlying international manufacturing decisions. Faber et al., (2025) provide particularly important evidence by demonstrating that uncertainty can encourage reshoring when industrial robots make production in high-income economies economically viable. This relationship suggests that geographical

restructuring cannot be explained through geopolitical risk alone. Firms may recognise the strategic benefits of relocating production but remain unable to act when labour costs, supplier availability, or production economics make alternative locations uncompetitive. Automation can alter this calculation by reducing dependence on labour cost advantages and increasing the feasibility of manufacturing closer to major markets. Foster-McGregor and Zhu (2025) place technological capability within the broader relationship between global value chains, productivity, and inclusive growth, highlighting the increasing importance of technology for value creation within internationally fragmented production systems. The broader global value chain literature similarly identifies digitalisation as a major force reshaping international production and enabling geographically dispersed activities to remain coordinated. Technology therefore performs two apparently contrasting roles. Automation can support the relocation of selected manufacturing activities towards higher cost economies, while digital systems can simultaneously make internationally distributed networks easier to coordinate. The resulting geography depends on how these technological forces interact with industry characteristics, production scale, market proximity, and geopolitical exposure. The balance between technological transformation and responsible organisational practice remains important when new technologies reshape established operating systems (Yusof & Abd Wahab, 2021).

Digital connectivity also changes the strategic meaning of distance because information, services, and coordination can increasingly move across-borders independently of physical production. The Global Value Chain Development Report 2025 identifies digital trade and data flows as critical mechanisms enabling production networks to adapt while remaining internationally connected. Foster-McGregor and Zhu (2025) further emphasise the relationship between technology, productivity, and participation in global value chains, indicating that technological capability increasingly determines which firms and economies can capture higher value activities. At the same time, Faber et al., (2025) demonstrate that technological capability can reshape physical location decisions when automation changes the relative economics of offshore and domestic manufacturing. These developments imply that supply chain rewiring is occurring simultaneously across physical and digital geographies. Manufacturing facilities may become more geographically diversified or selectively reshored, while design, data, analytics, engineering, and digitally delivered services remain deeply integrated across-borders. Firms should therefore evaluate location decisions according to technological ecosystems as well as conventional cost variables. Countries capable of combining advanced manufacturing, digital infrastructure, skilled labour, reliable data systems, research capability, and strong supplier networks are likely to become increasingly attractive locations for strategic investment. The competitive geography of international business will consequently reflect the ability to integrate physical production with sophisticated technological and knowledge capabilities.

2.5 Industrial Policy Reshaping Global Value Creation Geography

Government intervention has become increasingly influential in shaping supply chain geography as countries compete to secure strategic industries, technological capabilities, critical inputs, and high value investment. The contemporary policy environment extends beyond conventional trade liberalisation and increasingly includes subsidies, local production incentives, export controls, investment screening, strategic procurement, and targeted trade arrangements. Koopman and Huang (2025) position industrial policy within a strategically contested global economy, demonstrating how

contemporary global value chains are increasingly influenced by policy objectives extending beyond conventional efficiency considerations. Gopinath et al., (2025) similarly show that trade restrictions can redirect production and foreign investment towards third countries capable of serving as connectors between fragmented geopolitical blocs. Dufour et al., (2025) identify targeted trade deals as an emerging form of global value chain governance, particularly where governments seek to address strategic concerns involving carbon mitigation, critical minerals, and digital trade. These developments demonstrate that corporate location decisions increasingly operate within policy environments deliberately designed to influence the geographical allocation of investment and production. Firms must therefore assess not only wages, productivity, infrastructure, and logistics costs, but also subsidies, regulatory requirements, trade privileges, political relationships, technology restrictions, and the durability of government support when evaluating future production locations. Corporate governance research further highlights ethical accountability as an important foundation for sustainable organisational development under complex strategic conditions (Yusof et al., 2026).

The growing influence of industrial policy creates significant opportunities for countries seeking to improve their position within changing international production networks, but policy support alone cannot guarantee sustainable integration. The global value chain literature emphasises that resilience, inclusion, productivity, and technological upgrading remain closely connected to domestic capabilities. Cheng et al., (2025) highlight the continuing importance of foreign direct investment and trade finance for global value chain integration, while Foster-McGregor and Zhu (2025) emphasise technology and productivity as foundations for capturing greater value from international production. Wang et al., (2025) further demonstrate through research on electric vehicle value chains that technological transformation is generating new opportunities for developing economies, although participation depends on the ability to develop appropriate production capabilities and industrial linkages. These findings suggest that the beneficiaries of supply chain rewiring will not necessarily be countries offering the largest incentives or lowest labour costs. Sustainable attractiveness requires an ecosystem capable of supporting investment after the initial relocation decision. Infrastructure, workforce quality, supplier development, institutional credibility, technological competence, financing, and international connectivity remain essential. The new geography of global business is therefore emerging from an increasingly complex interaction between corporate strategy and national economic policy, with competitive advantage shifting towards locations capable of combining commercial efficiency, strategic reliability, technological capability, and effective integration into evolving regional and global production networks. Sustainable supply chain development increasingly requires innovation, transparency, and regulatory compliance to be integrated into operational strategy (Yusof et al., 2026).

3. GLOBAL SUPPLY CHAIN REWIRING CREATING STRATEGIC BUSINESS PRESSURES

A new geography of international business is emerging as firms attempt to protect continuity without abandoning the economic advantages created by global specialisation. The resulting transition is far more complicated than simply moving factories closer to customers or shifting suppliers towards politically aligned economies. Current evidence shows that global networks are being reconfigured through friendshoring, reshoring, regionalisation, diversification, and selective localisation, but these strategies produce very different outcomes across industries and regions. Ando et al., (2026)

demonstrate that friendshoring, nearshoring, and reshoring are progressing unevenly across major production hubs, while Valdiglesias (2026) finds that friendshoring can redirect trade without necessarily producing comprehensive relocation of production. Yücesan (2025) similarly argues that geopolitical fragmentation does not imply the disappearance of global supply chains because international production remains deeply dependent on specialised cross-border capabilities. These developments create a strategic environment in which firms must simultaneously manage political risk, efficiency losses, supplier dependence, capability constraints, and increasingly interventionist industrial policies. Five issues are particularly significant: the collision between geopolitical security and economic efficiency, the limits of diversification, the emergence of new concentration risks, escalating industrial policy competition, and the difficulty of reproducing technological and industrial capabilities across new locations. Intermodal logistics evidence likewise demonstrates that innovation and coordinated network strategies are important for managing complex international supply chain relationships (Yusof & Othman, 2024).

3.1 Geopolitical Security Reshaping Global Supply Chain Efficiency

Political relationships are becoming embedded within decisions that were previously governed mainly by cost, productivity, supplier specialisation, and access to international markets. Friendshoring illustrates this shift particularly clearly because firms are increasingly encouraged to organise sourcing and production around countries considered politically reliable. Ando et al., (2026) find that political friendshoring has strengthened across major production systems, although the pattern is significantly more pronounced in some regions than others. Valdiglesias (2026) similarly demonstrates that geopolitical rivalry is influencing trade reorientation within APEC economies, reinforcing the growing importance of political relationships in international sourcing decisions. Yücesan (2025), however, cautions against interpreting these developments as evidence that global production networks can simply be replaced by nationally or regionally self-contained systems. The commercial problem is substantial. Politically aligned locations may provide greater strategic security while offering weaker supplier ecosystems, higher production costs, smaller labour pools, inadequate logistics infrastructure, or limited technological capabilities. Established production centres can therefore remain economically attractive even when their geopolitical exposure increases. Firms are consequently being forced to make location decisions in which political security and commercial efficiency increasingly point towards different geographical solutions. The resulting supply chain architecture may become safer from one category of risk while becoming less competitive, more expensive, or operationally less mature.

A further complication arises because political alignment at the first supplier level does not necessarily remove geopolitical dependence from deeper tiers of the network. Contemporary manufacturing often relies on specialised materials, components, machinery, software, intellectual property, and intermediate inputs that originate from geographically concentrated ecosystems. Su et al., (2025) find that geopolitical risk can materially impede global supply chain performance and that diversification can only partially moderate this exposure. Bednarski et al., (2025) similarly conceptualise geopolitical disruptions as systemic events capable of affecting supply chain configuration, flows, and management rather than isolated disturbances affecting individual transactions. Urciuoli et al., (2017) established earlier that supply chain security requires organisations to align security strategies with wider business objectives, an observation that remains highly relevant as geopolitical considerations increasingly shape sourcing decisions. Friendshoring

can therefore generate an illusion of independence when final assembly has moved to a politically preferred country while critical upstream dependencies remain unchanged. The strategic issue is not simply where direct suppliers are located, but whether firms understand the complete geography of their dependency structure. Without multi-tier visibility, geopolitical rewiring may merely relocate the visible portion of the supply chain while leaving its most strategically sensitive dependencies concentrated elsewhere.

3.2 Diversification Increasing Resilience Creating Greater Organisational Complexity

Geographical diversification has become one of the most widely promoted responses to supply disruption, yet expanding the number of countries and suppliers within a network can create substantial managerial and economic complexity. Ahn and Tan (2025) demonstrate that diversified sourcing can reduce vulnerability to country-specific shocks, but the resilience benefit comes with efficiency costs because alternative suppliers are not necessarily as productive or economical as established sources. Doan et al., (2025) provide firm-level evidence showing that Japanese multinational enterprises respond to geopolitical exposure in China by increasing activity in ASEAN rather than undertaking complete decoupling. Namdar et al., (2025) likewise show that policy uncertainty can encourage firms to geographically diversify their supply bases instead of relying exclusively on nearshoring or domestic sourcing. These findings demonstrate that diversification provides optionality, but optionality is not free. Additional suppliers create qualification requirements, contractual interfaces, quality assurance responsibilities, information flows, transportation arrangements, compliance obligations, and relationship management costs. A network designed to avoid excessive dependence on one country can consequently become more difficult to coordinate across several countries. Supply chain resilience therefore cannot be measured merely by counting alternative suppliers or locations. The strategic value of diversification depends on whether those alternatives are genuinely capable, commercially viable, technologically compatible, and available when disruption occurs.

The persistence of established production ecosystems further limits the extent to which diversification can generate genuine independence. Todo (2026) shows that Asian production networks remain deeply connected to China despite growing economic security concerns, demonstrating the durability of supplier relationships and industrial capabilities developed over decades. Doan et al., (2025) similarly find that diversification towards ASEAN generally supplements rather than replaces existing Chinese production. Olhager et al., (2025) provide additional evidence that reshoring behaviour is highly context dependent and that relocation cannot be understood as a universal reaction to supply disruption. Sawik (2025) likewise demonstrates that reshoring decisions require careful economic evaluation because network redesign directly affects supply chain viability and both average and worst case performance. These findings expose an important weakness in simplistic diversification strategies. A company may add factories in Vietnam, Mexico, India, or another emerging production location while continuing to obtain essential components, equipment, or materials from the same upstream source. The visible network becomes more geographically dispersed, but the underlying dependency remains concentrated. Effective diversification therefore requires deeper analysis of upstream sourcing structures, technological substitutability, supplier development, and the capacity of alternative locations to operate independently when the original production centre becomes unavailable.

3.3 Emerging Manufacturing Hubs Creating New Concentration Risks

The movement towards alternative production locations is creating major opportunities for emerging manufacturing economies, but rapid investment concentration can produce new vulnerabilities. When many firms pursue similar China Plus One, nearshoring, or friendshoring strategies simultaneously, the same limited group of countries can become preferred destinations for production relocation. Cerqueti et al., (2026) find that recent disruptions are generating selective regionalisation and heterogeneous changes in the position of suppliers within global value chains rather than a uniform retreat from international production. Valdiglesias (2026) similarly demonstrates that friendshoring primarily redirects trade relationships rather than eliminating international interdependence. de Oliveira et al., (2026) show that participation in global value chains continues to create important opportunities for emerging market firms, but these opportunities depend on how countries and firms integrate into increasingly complex production systems. Rapid inflows of manufacturing investment can place substantial pressure on electricity systems, ports, road networks, industrial land, housing, skilled labour, and domestic supplier capacity. Labour costs can rise quickly when multiple multinational firms compete for similar capabilities, while infrastructure congestion can undermine the original economic advantage that attracted production. Geographic diversification can therefore reproduce concentration risk when corporate relocation strategies converge excessively on the same alternative economies.

The growing role of connector countries creates another layer of vulnerability because these economies may become strategically important intermediaries between competing geopolitical blocs. Luo et al., (2025) show that the shift of United States imports towards ASEAN economies has not eliminated Chinese upstream involvement, producing increasingly important triangular relationships between China, ASEAN, and the United States. Wang et al., (2026) further indicate that digital capability can strengthen global value chain resilience, meaning that the competitiveness of emerging production hubs increasingly depends on both physical and digital connectivity. Raman (2026) similarly highlights the importance of flexibility and resilience capabilities in increasingly complex supply chain environments. These relationships demonstrate why the emergence of new hubs should not be treated automatically as successful risk reduction. Countries positioned between major economies may themselves become vulnerable to diplomatic pressure, regulatory divergence, trade restrictions, infrastructure congestion, or capacity shortages. The next generation of supply chain concentration may therefore emerge not in the traditional manufacturing centres that firms are trying to diversify away from, but in the small number of alternative countries receiving disproportionate relocation activity. Strategic network design must consequently evaluate regional capacity, political stability, upstream dependency, infrastructure scalability, and the availability of substitutes before treating a new production hub as a durable source of resilience.

3.4 Industrial Policy Reshaping Global Production Location Decisions

Governments are increasingly shaping international production geography through subsidies, tariffs, tax incentives, local content requirements, export restrictions, investment screening, strategic procurement, and technology controls. This expansion of industrial policy reflects growing concern about critical industries and national economic security, but it also complicates corporate location decisions. Gereffi et al., (2025) argue that industrial policy and global value chains are becoming increasingly interconnected as governments seek greater control over strategic capabilities while firms continue to operate across international production networks. Mohammadi et al., (2026)

similarly identify industrial and state policy as increasingly important dimensions of global value chain upgrading and governance. Karbevaska et al., (2026) demonstrate that policy interventions such as friendshoring, Country Plus One, and reshoring can alter global supply network structures in unexpected ways. Their analysis finds that friendshoring and Country Plus One can actually increase the number of international supply links, while aggressive reshoring becomes difficult where critical products cannot easily be substituted. Industrial policy can therefore produce outcomes that differ substantially from political intentions. A policy designed to reduce international dependence may instead create more complex cross-border networks, while subsidies intended to attract domestic production may generate facilities that remain dependent on imported technology and materials.

The larger concern is whether policy-driven relocation creates genuinely competitive industrial ecosystems or simply shifts production through temporary financial incentives. D'Ambrosio et al., (2025) show that automation can improve the feasibility of reshoring, but larger firms may still find alternative strategies such as nearshoring or friendshoring more commercially attractive. Sawik (2025) likewise demonstrates that economically viable reshoring depends on careful network optimisation rather than political preference alone. Yücesan (2025) reinforces the point that global supply chains persist because international specialisation continues to generate important economic advantages. Industrial incentives can attract an initial investment decision, but sustainable competitiveness requires skilled labour, supplier depth, infrastructure, technological capability, innovation capacity, access to markets, and policy predictability. Weakness in these fundamentals can transform subsidised relocation into an expensive form of geographical duplication. Governments may then compete to reproduce capabilities that already exist efficiently elsewhere, while firms become increasingly dependent on policy support to justify higher operating costs. The central current issue is therefore not simply the return of industrial policy, but the possibility that geopolitical competition may encourage location decisions that improve national security objectives while reducing economic efficiency. The sustainability of the new geography of global business will depend on whether policy support develops genuine productive capability rather than merely financing the movement of existing activities.

3.5 Capability Constraints Narrowing Feasible Global Production Locations

Not every politically desirable location possesses the industrial capabilities required to become a credible production alternative. Complex manufacturing depends on accumulated knowledge, specialised suppliers, skilled technicians, engineering expertise, quality systems, logistics infrastructure, digital connectivity, and technological ecosystems that cannot be reproduced quickly. Faber et al., (2025) demonstrate that automation changes the economics of reshoring by making domestic production more feasible under specific conditions, confirming that technological capability is a decisive factor in relocation decisions. Massari et al., (2025) similarly position digital transformation as an important enabling mechanism for resilient supply chains, indicating that network reconfiguration increasingly depends on advanced technological capability rather than physical relocation alone. Nguyen et al., (2026) reinforce this perspective by identifying resilient and sustainable supply chain development as an increasingly interconnected field requiring stronger risk management and performance capabilities. Technology therefore determines which countries are genuinely capable of absorbing relocated production. A country may offer favourable political relations, lower labour costs, and attractive incentives, yet remain unsuitable if local suppliers cannot meet required technical specifications or if digital, engineering, and quality infrastructures are

inadequate. The geography of politically preferred locations is consequently much broader than the geography of operationally feasible locations. Yusof et al., (2025) further indicate that smart technologies can strengthen competitiveness when they improve organisational adaptability rather than operate as isolated tools.

The difficulty becomes even greater when the deeper technological dependencies behind supposedly localised production are considered. Sinani et al., (2026) show that multinational enterprises increasingly operate within geopolitical tensions that affect international strategy and organisational decisions. Valdiglesias (2026) demonstrates that geopolitical pressures frequently redirect trade more readily than they produce complete production relocation. Wang et al., (2026) further highlight the contribution of digital capability to global value chain resilience, reinforcing the significance of technology in determining whether production networks can adapt successfully. The implications are substantial. A product assembled in a newly established domestic facility may still rely on foreign semiconductors, machine tools, specialised software, industrial chemicals, intellectual property, or critical minerals. Relocating the final production stage therefore does not necessarily create technological autonomy. Yücesan (2025) explains why international supply chains remain persistent despite political pressure, while Urciuoli et al., (2017) demonstrate the continuing importance of integrating risk and security considerations into supply chain strategy. Supply chain rewiring will consequently remain constrained by the time required to develop complete industrial ecosystems. The decisive competitive question is not merely which countries firms would prefer to use, but which locations can realistically reproduce the capabilities, supplier relationships, technological depth, and infrastructure required to sustain globally competitive production.

4. STRATEGIC RECONFIGURATION RESHAPING EMERGING GLOBAL BUSINESS GEOGRAPHY

Competitive advantage within international production is increasingly determined by the ability to redesign geographical exposure without destroying the specialised relationships that make global networks economically productive. The current transformation therefore demands more than relocating factories or replacing suppliers in politically sensitive markets. Ando et al., (2026) demonstrate that political friendshoring and reshoring are becoming more visible, but their intensity differs substantially across America, Asia, and Europe, confirming that geographical responses remain highly context dependent. Ahn and Tan (2025) further establish that diversification can strengthen resilience against adverse trade shocks, although the resulting protection must be balanced against efficiency losses and network rigidities. López et al., (2025) reinforce this interpretation by identifying collaboration, resilience, financial management, and viable supply chain management as broadly applicable responses to geopolitical disruption. These findings suggest that the emerging geography of global business should be understood as a strategic redistribution of exposure rather than a retreat from international integration. Firms must determine which activities require geographical alternatives, which relationships should remain globally specialised, and which capabilities justify greater regional or domestic control. The discussion therefore centres on five strategic dimensions that explain how supply chain rewiring can create stronger and more economically sustainable international production networks.

4.1 Managing Strategic Interdependence Without Pursuing Complete Independence

Absolute supply chain independence is economically unrealistic for most multinational firms because modern production depends on specialised capabilities distributed across countries and industries. Attempts to remove international dependence completely can sacrifice economies of scale, supplier expertise, technological specialisation, and access to competitive inputs without necessarily eliminating vulnerability. Namdar et al., (2025) estimate that broad localisation could reduce global trade by more than 18 percent and global real GDP by over 5 percent, while failing to consistently improve economic stability. Airaudo et al., (2025) further demonstrate that trade fragmentation is neither uniform nor symmetrical across countries and products, which makes broad geographical withdrawal an inadequate response to heterogeneous risk. Chang et al., (2025) provide additional evidence that geopolitical risk weakens global supply chain resilience through channels that include reduced trade credit and increased inventory costs. These findings support a model of managed interdependence in which firms preserve internationally valuable relationships while reducing excessive dependence on strategically sensitive nodes. The objective should be to distinguish beneficial interdependence from dangerous concentration. Critical components with limited substitutes may require alternative sources, whereas highly competitive and easily replaceable inputs can remain internationally concentrated when the economic benefits are substantial. Such differentiation enables organisations to protect strategically important activities without dismantling the productivity advantages generated by global specialisation.

Greater attention must consequently be directed towards the structure of dependency rather than the nationality of direct suppliers alone. A firm may shift purchasing towards a politically aligned country while its new supplier continues to depend on components, machinery, intellectual property, or raw materials originating from the location that the firm intended to avoid. Ando et al., (2026) show that political friendshoring is developing unevenly across major production hubs, indicating that established economic relationships continue to constrain geographical adjustment. López et al., (2025) similarly demonstrate that geopolitical disruptions generate multiple categories of supply chain effects and require correspondingly differentiated managerial responses. Airaudo et al., (2025) add that fragmentation patterns vary considerably across products, exports, and imports, reinforcing the danger of treating geographical risk as homogeneous. Effective de-risking therefore requires multi-tier visibility capable of revealing common upstream suppliers, shared transportation corridors, technology dependencies, and concentrated sources of critical inputs. Strategic interdependence becomes more resilient when firms understand where dependencies originate, how disruption can propagate, and which alternative pathways can maintain continuity. The geographical objective should not be to eliminate cross-border dependence, but to ensure that no strategically important relationship becomes sufficiently concentrated or opaque to threaten the viability of the wider production network.

4.2 Designing Selective Diversification Around Critical Strategic Exposure

Resilience is strengthened most effectively when diversification is directed towards vulnerabilities that could cause substantial operational or financial consequences rather than applied uniformly across the entire supplier portfolio. Ahn and Tan (2025) demonstrate that diversification produces the greatest welfare benefits when it targets imports that are highly exposed to shocks, positioned upstream, and constrained by substantial network rigidities. Their findings are strategically important because they challenge the assumption that a larger number of suppliers automatically

produces a stronger network. Diversification creates additional qualification requirements, purchasing interfaces, logistics arrangements, compliance obligations, and coordination costs. Faber et al., (2025) similarly find no strong general evidence of diversification or nearshoring in response to uncertainty, although reshoring becomes more likely where automation makes relocation economically feasible. López et al., (2025) further demonstrate that different geopolitical disruptions require different combinations of mitigation, response, and recovery decisions. Firms should consequently segment supply exposure according to component criticality, substitutability, supplier concentration, recovery time, geopolitical sensitivity, and financial impact. High risk inputs may justify geographically independent alternatives and additional capacity, while low risk commodities may continue to be sourced primarily according to efficiency. Selective diversification can therefore improve resilience without allowing risk reduction initiatives to become an uncontrolled source of operational complexity and permanent cost escalation.

The quality of diversification is equally important because geographically separate suppliers may remain vulnerable to the same underlying disruption. Alternative producers can share ports, shipping routes, technologies, raw material sources, energy systems, or upstream manufacturers, meaning that nominal diversification may provide considerably less protection than expected. Ahn and Tan (2025) explicitly incorporate trade network rigidities into their analysis, demonstrating why supply relationships cannot be instantaneously substituted when disruption occurs. Faber et al., (2025) likewise show that the feasibility of geographical adjustment depends partly on technological conditions, confirming that alternative locations are not economically interchangeable. Dong et al., (2025) add another dimension by finding that artificial intelligence can mitigate some negative effects of geopolitical risk through efficiency gains, cost reduction, and improved contractual completeness. Diversification strategy should therefore evaluate independence of failure rather than geographical distance alone. Firms need to determine whether alternative suppliers possess genuinely separate production capabilities and whether they can scale rapidly when disruption affects another node. This approach transforms diversification from a numerical exercise into a portfolio decision based on the strategic value of each alternative. A smaller number of genuinely independent and capable suppliers may provide substantially greater resilience than a larger network whose apparent geographical diversity conceals common upstream vulnerabilities.

4.3 Developing Regional Production Portfolios Preventing Renewed Concentration

Regionalisation offers a potential middle ground between highly concentrated global sourcing and economically expensive domestic self sufficiency. Rather than transferring complete production systems into individual countries, multinational firms can distribute activities across complementary locations within strategically connected regions. Ando et al., (2026) show that friendshoring, nearshoring, and reshoring are developing differently across Factory America, Factory Asia, and Factory Europe, demonstrating that regional production structures possess distinctive economic and political characteristics. Airaudo et al., (2025) similarly find that trade fragmentation varies across products and directions of trade, indicating that geographical restructuring cannot be represented adequately through simple geopolitical blocs. Namdar et al., (2025) further emphasise adaptability, agility, and alignment rather than comprehensive relocation as foundations of resilient supply chains. These findings support the development of regional portfolios in which different locations perform activities according to their comparative capabilities. Advanced components may remain concentrated in established industrial centres, labour intensive assembly can expand into emerging

manufacturing economies, and logistics or distribution activities can be positioned closer to major consumer markets. Such arrangements preserve the economic advantages of specialisation while creating additional geographical options. Regionalisation consequently becomes strategically valuable when it redistributes exposure across complementary nodes rather than simply replacing one dominant production country with another.

New concentration risk nevertheless emerges when large numbers of firms select the same alternative locations. Manufacturing investment can grow more rapidly than local infrastructure, supplier capacity, energy systems, logistics networks, or labour markets can accommodate. Namdar et al., (2025) report that significant import concentration has increased substantially compared with the late 1990s, illustrating that concentration remains an important structural vulnerability even within an internationally diversified trading system. Ando et al., (2026) also show that the intensity of sourcing reconfiguration differs across regions, suggesting that some locations may attract substantially greater adjustment than others. Chang et al., (2025) demonstrate that institutional conditions influence the severity of geopolitical risk effects on supply chain resilience, further indicating that the attractiveness of an alternative location cannot be evaluated solely through production costs. Regional portfolio design must therefore assess infrastructure scalability, workforce availability, supplier depth, institutional reliability, energy security, transportation capacity, and political exposure before substantial production commitments are made. Firms should also maintain secondary alternatives within major regions so that an emerging manufacturing hub does not become another irreplaceable node. Successful regionalisation is achieved when production becomes more geographically flexible without creating a new generation of bottlenecks that reproduce the vulnerabilities associated with the previous network configuration.

4.4 Expanding Location Flexibility Through Technology Digital Capability

Technological advancement is changing the economics of geographical location by reducing some of the traditional cost disadvantages associated with producing outside established low-cost manufacturing centres. Faber et al., (2025) demonstrate that higher uncertainty can encourage reshoring when industrial automation makes production in high-income countries economically feasible. This relationship is significant because it indicates that supply chain geography is not determined solely by geopolitical preferences. A firm may wish to relocate production for strategic reasons but remain unable to justify the decision until automation, productivity improvements, or process innovation narrow the cost difference between locations. Dong et al., (2025) similarly find that artificial intelligence can enhance supply chain resilience under geopolitical risk by generating cost reductions, efficiency gains, and improvements in contractual completeness. Namdar et al., (2025) further identify digitalisation and cross-border data flows as important mechanisms for improving traceability, preparedness, and responsiveness across global supply chains. Technology therefore expands the geography of feasible production by allowing firms to consider locations that previously lacked sufficient cost competitiveness or coordination capability. The strategic value of technology lies not merely in automating individual operations, but in increasing the range of geographical configurations that organisations can manage efficiently under changing economic and political conditions.

Digital integration also makes geographically diversified production more manageable by connecting planning, procurement, manufacturing, logistics, and risk information across multiple

locations. Dong et al., (2025) establish a positive relationship between artificial intelligence and supply chain resilience while demonstrating that geopolitical risk has the opposite effect. Their findings suggest that technological capability can partially offset the managerial burden associated with more complex international networks. Namdar et al., (2025) likewise emphasise that digital tools can improve traceability and responsiveness, while efficient logistics and cross-border services remain essential to maintaining supply chain connectivity. Faber et al., (2025) show from another perspective that automation can change physical location decisions by modifying the economic feasibility of reshoring. Together, these findings reveal two complementary technological effects. Automation can alter where physical production takes place, while digital systems can strengthen coordination between geographically dispersed production locations. Firms therefore do not necessarily need to choose between concentrated efficiency and dispersed resilience. Advanced information systems, artificial intelligence, analytics, automation, and integrated planning can allow more geographically diverse networks to operate with greater visibility and control. Technology consequently becomes a strategic infrastructure for supply chain rewiring, enabling firms to redistribute physical exposure while maintaining the information connectivity required for coordinated international operations.

4.5 Reframing Industrial Policy Around Capability Competitive Resilience

Government intervention can accelerate geographical reconfiguration, but the durability of relocated production ultimately depends on whether new locations develop the capabilities required to remain competitive after incentives diminish. Subsidies, tax concessions, local content requirements, investment screening, and strategic trade measures can influence corporate decisions, yet financial inducements cannot independently create sophisticated industrial ecosystems. Ando et al., (2026) demonstrate that political friendshoring has become increasingly important, confirming that geopolitical relationships are influencing contemporary sourcing patterns. Faber et al., (2025), however, show that technological feasibility remains crucial to actual reshoring decisions, illustrating that political motivation must interact with economic capability before relocation becomes sustainable. Namdar et al., (2025) similarly warn that comprehensive relocalisation can impose substantial economic costs without consistently improving resilience. Industrial policy should therefore concentrate less on reproducing entire international supply chains domestically and more on developing capabilities where strategic exposure is genuinely consequential. Investments in infrastructure, advanced manufacturing, workforce skills, research capacity, supplier development, digital systems, and logistics connectivity can create durable location advantages that remain valuable beyond the period of direct government support. Strategic resilience becomes economically sustainable when public policy strengthens productive capability rather than simply financing geographical relocation.

International cooperation should remain an integral component of industrial strategy because many strategic resources and technologies cannot be reproduced efficiently within national boundaries. Namdar et al., (2025) explicitly recommend international cooperation, public-private partnerships, trade facilitation, regulatory interoperability, and stronger logistics services as mechanisms for improving resilience without imposing the costs associated with widespread relocalisation. Ahn and Tan (2025) likewise demonstrate that carefully targeted diversification can produce greater welfare benefits than indiscriminate restructuring, reinforcing the value of selective rather than universal intervention. López et al., (2025) identify collaboration alongside resilience and viable supply chain

management as broadly effective strategies for addressing geopolitical disruption. These findings indicate that the emerging geography of global business should be built around competitive resilience rather than economic isolation. Governments can strengthen critical domestic capabilities while preserving access to specialised international suppliers, trusted partners, technology networks, and major markets. Firms can similarly combine regional alternatives with globally competitive sources instead of treating localisation and globalisation as mutually exclusive choices. The most durable production architecture will therefore be one in which strategic autonomy is selective, international interdependence is transparent and manageable, and policy intervention strengthens the capabilities required for long-term competitiveness rather than protecting inefficient geographical arrangements from global competition.

5. STRATEGIC DIRECTIONS BUILDING RESILIENT COMPETITIVE GLOBAL SUPPLY NETWORKS

The emerging geography of global business requires organisations to move beyond reactive relocation and develop a deliberate architecture for managing geopolitical exposure, operational continuity, technological dependence, and economic competitiveness. Recent evidence demonstrates that neither unrestricted global concentration nor extensive localisation provides a universally effective response to contemporary uncertainty. Ahn and Tan (2025) find that diversification can reduce vulnerability to trade shocks, but excessive diversification imposes efficiency costs, while Faber et al., (2025) demonstrate that reshoring becomes economically feasible only when technological conditions, particularly automation, support the transition. Namdar et al., (2025) similarly show that firms facing upstream policy uncertainty tend to geographically diversify their supply bases, although greater diversification introduces additional coordination and transaction costs. These findings indicate that future supply chain strategy should not pursue geographical change for its own sake. Decisions should instead differentiate between strategically critical dependencies and commercially acceptable interdependencies. Organisations require networks that can absorb disruption without sacrificing the productivity advantages generated by international specialisation. The following recommendations therefore emphasise strategic dependency management, selective diversification, regional production portfolios, technology-enabled network intelligence, and coordinated industrial capability development as foundations for a more resilient geography of global business.

Effective implementation also requires organisations to recognise that supply chain rewiring is a continuous strategic process rather than a single relocation decision. Geopolitical conditions, trade policies, supplier capabilities, transportation networks, technologies, and production economics evolve continuously, meaning that geographical configurations considered resilient today may become vulnerable later. Chang et al., (2025) demonstrate that geopolitical risk can undermine supply chain resilience through mechanisms including higher inventory costs and reduced trade credit, highlighting the financial consequences of geographical exposure. Yücesan (2025) further argues that global supply chains continue to evolve under deglobalisation pressures rather than simply disappearing, reinforcing the need for adaptive network strategies. Dong et al., (2025) show that artificial intelligence can strengthen resilience under geopolitical risk, particularly through efficiency improvements and stronger contractual completeness. Supply chain redesign should consequently be institutionalised within strategic planning, investment evaluation, procurement governance, and enterprise risk management. Management should continuously reassess where

critical activities are located, how alternative capacity can be activated, and whether changing economic or political conditions justify further geographical adjustment. Such continuous evaluation transforms rewiring from episodic crisis management into a permanent organisational capability.

5.1 Establish Strategic Dependency Mapping Through Multi Tier Intelligence

Organisations should establish comprehensive dependency mapping capable of identifying vulnerabilities across multiple tiers rather than evaluating geographical exposure only through direct suppliers. Modern production systems contain hidden dependencies involving raw materials, intermediate components, specialised equipment, logistics corridors, software, intellectual property, and production technologies. Chang et al., (2025) demonstrate that geopolitical risk can weaken global supply chain resilience and increase inventory costs, confirming that external political conditions can propagate into operational and financial performance. Namdar et al., (2025) further show that firms respond more strongly to upstream policy uncertainty than domestic policy uncertainty, demonstrating the strategic importance of conditions affecting suppliers beyond the focal organisation. Firms should therefore construct multi-tier maps identifying the country, ownership structure, production capacity, criticality, substitutability, and political exposure associated with strategically important suppliers. Common dependencies should receive particular attention because apparently independent suppliers may rely on identical upstream manufacturers, transportation gateways, technologies, or materials. Management can subsequently classify dependencies according to potential disruption severity, recovery time, availability of substitutes, and financial consequences. Such visibility would enable organisations to distinguish genuine geographical diversification from networks that merely appear diversified at the first supplier tier while remaining structurally concentrated upstream.

Dependency intelligence should subsequently be connected directly to managerial decision processes rather than maintained as a static risk register. Ahn and Tan (2025) demonstrate that the resilience benefits of diversification vary according to exposure, upstream position, and the rigidity of supply relationships, indicating that not every dependency requires an identical response. Firms should therefore establish risk thresholds that trigger specific actions when political, regulatory, financial, logistics, or supplier conditions deteriorate. These actions can include qualifying alternative suppliers, increasing temporary inventory buffers, reallocating production, securing additional transportation capacity, or accelerating supplier development. Bednarski et al., (2026) conceptualise geopolitical disruption as a systemic supply chain phenomenon, reinforcing the importance of examining propagation across interconnected networks rather than treating individual disruptions independently. Network intelligence should consequently integrate procurement information, supplier performance, geopolitical indicators, trade restrictions, inventory exposure, logistics data, and capacity information within a common decision framework. Senior management should receive periodic assessments identifying which dependencies have become more concentrated, which alternative sources remain operationally credible, and where intervention is required. This approach allows firms to preserve valuable international relationships while preventing commercially beneficial interdependence from developing into strategically unacceptable dependence.

5.2 Adopt Selective Diversification Based Upon Critical Economic Value

Diversification should be targeted towards exposures where disruption would create significant operational or financial consequences rather than implemented indiscriminately across the entire supply base. Ahn and Tan (2025) demonstrate that diversification can improve resilience but also impose efficiency costs because alternative suppliers may be more expensive than established sources. Namdar et al., (2025) similarly find that firms respond to upstream policy uncertainty by geographically diversifying their supply bases, while acknowledging that broader sourcing structures create additional coordination and transaction costs. Organisations should therefore segment purchased items according to strategic importance, supplier concentration, substitutability, geopolitical exposure, recovery time, and contribution to customer service. Components that can halt production or require lengthy qualification processes should receive stronger geographical redundancy than standard items available from competitive markets. Such segmentation would allow firms to allocate resilience investment according to the economic consequences of disruption rather than applying expensive redundancy universally. Alternative suppliers should also be evaluated according to their ability to provide meaningful operational independence. A supplier located in another country offers limited resilience if it depends on the same upstream source or transportation corridor. Selective diversification should consequently maximise the strategic value of alternatives while controlling the managerial complexity created by network expansion.

Organisations should additionally establish a formal economic test for each major diversification decision. Resilience investments create value by reducing expected disruption losses, but they also generate supplier qualification costs, duplicated tooling, additional contracts, fragmented purchasing volumes, and more complicated logistics arrangements. Sawik (2025) demonstrates that economically viable reshoring requires explicit consideration of service, cost, recovery, and risk objectives rather than assuming that domestic relocation is inherently superior. Faber et al., (2025) similarly find no strong general evidence that uncertainty automatically generates nearshoring or diversification, while showing that reshoring becomes more likely when automation makes it economically feasible. Firms should therefore calculate the expected economic contribution of alternative sourcing by comparing resilience benefits against incremental operating and coordination costs. Management can evaluate scenarios involving single sourcing, dual sourcing, regional sourcing, backup suppliers, and partial reshoring to identify the configuration providing the strongest balance between continuity and profitability. This prevents geopolitical anxiety from driving costly network changes without sufficient economic justification. The objective should be purposeful redundancy, where every additional supplier or location performs a defined resilience function and contributes measurable strategic value to the network.

5.3 Build Regional Production Portfolios Preventing Geographic Dependency

Regional portfolio development offers firms an opportunity to distribute exposure while retaining the productivity advantages generated by international specialisation. Instead of transferring complete production systems from one dominant country to another, organisations should allocate activities across several complementary locations based on capability, market access, logistics connectivity, political conditions, and production economics. Ando et al., (2026) show that friendshoring, nearshoring, and reshoring evolve differently across major production hubs, demonstrating that geographical strategies must reflect regional conditions rather than universal assumptions. The Global Value Chain Development Report 2025 similarly documents the

emergence of new regional hubs and firm networks as production, trade, and investment adjust to geopolitical, technological, and environmental pressures. Firms should therefore develop regional production portfolios combining established centres with emerging alternatives instead of abandoning valuable ecosystems prematurely. Advanced components can remain within locations possessing deep technological capabilities, while assembly, distribution, or selected manufacturing processes can expand into complementary markets. This configuration preserves specialised knowledge while increasing geographical optionality. Regional portfolios should be designed around the ability to shift production volumes progressively between locations when disruption occurs, creating flexibility without requiring permanent duplication of every activity across every market.

Care must nevertheless be taken to prevent diversification strategies from creating another generation of concentrated production hubs. When numerous companies simultaneously select the same alternative locations, infrastructure congestion, labour shortages, wage inflation, logistics bottlenecks, energy constraints, and supplier capacity limitations can erode the advantages originally motivating relocation. Yücesan (2025) emphasises that global supply chains continue to evolve because firms remain dependent on internationally distributed capabilities, illustrating why geographical substitution is rarely straightforward. Namdar et al., (2025) also demonstrate that geographical diversification represents a response to upstream policy uncertainty, suggesting that future sourcing networks may become increasingly distributed across multiple jurisdictions. Firms should therefore assess the scalability of alternative locations before committing substantial production volumes. Evaluation criteria should include port and transportation capacity, electricity reliability, industrial land, workforce availability, supplier depth, digital infrastructure, regulatory stability, and potential exposure to future geopolitical pressure. Secondary locations within each region should also be developed where economically feasible. This creates a layered geographical architecture in which firms maintain primary production centres while cultivating credible alternatives capable of absorbing selected volumes. Regionalisation can consequently strengthen resilience without merely transferring excessive concentration from one established manufacturing economy to another emerging location.

5.4 Use Digital Intelligence Automation Enabling Geographic Flexibility

Digital capability should become a central component of supply chain rewiring because geographical diversification creates little resilience when organisations cannot see, coordinate, and rapidly adjust their expanded networks. Dong et al., (2025) demonstrate that artificial intelligence is positively associated with supply chain resilience and can mitigate some adverse effects of geopolitical risk, particularly within high technology and highly competitive industries. Firms should therefore integrate artificial intelligence, advanced analytics, supplier intelligence, scenario modelling, and real time visibility into network management. Digital systems can continuously evaluate supplier conditions, transportation delays, inventory exposure, political developments, capacity constraints, and changing demand patterns across multiple locations. Rather than relying on periodic manual reviews, management can use exception based systems to identify vulnerabilities requiring immediate intervention. Predictive models can estimate how disruptions affecting particular countries, ports, suppliers, or components could propagate through the network, allowing managers to evaluate alternative sourcing and production responses before disruption becomes severe. Digital capability should nevertheless support managerial judgement rather than replace it. Strategic

decisions involving geopolitical exposure and supplier relationships require contextual interpretation that automated models may not fully capture. The strongest approach combines analytical intelligence with experienced managerial assessment and clearly defined decision authority.

Automation should simultaneously be used to expand the number of locations in which production can remain economically viable. Faber et al., (2025) demonstrate that uncertainty can encourage reshoring when industrial robots make production in higher income economies economically feasible, establishing an important relationship between technology and production geography. Sawik (2025) further shows that reshoring viability depends on the interaction between cost, customer service, resilience, and government support. These findings suggest that firms should evaluate technology investment and geographical strategy jointly rather than treating automation and location as separate decisions. A location that appears commercially unattractive under labour intensive production may become competitive after automation improves productivity, consistency, and capacity flexibility. Organisations should therefore compare alternative network configurations under different automation scenarios, including domestic production, regional production, and distributed international manufacturing. Investments in robotics, digital twins, flexible manufacturing, advanced planning, and interoperable information systems can make production easier to replicate across locations while reducing dependence on scarce labour capabilities. Technology can consequently transform resilience from expensive physical redundancy into flexible operational capacity. The strategic objective is to create networks in which production can be transferred or scaled across locations without requiring prolonged reconstruction of processes, information systems, and operational knowledge.

5.5 Align Industrial Policy Corporate Strategy Long Term Capability

Governments and firms should treat industrial capability development as the foundation of sustainable supply chain rewiring rather than relying primarily on subsidies, tariffs, or political preferences to redirect production. Contemporary global value chain research demonstrates that industrial policy is becoming increasingly influential as countries seek strategic control over technologies, critical materials, manufacturing capabilities, and investment. Gereffi (2025) positions industrial policy within the changing architecture of global value chains, emphasising the interaction between national development objectives and internationally distributed production. The Global Value Chain Development Report 2025 similarly identifies industrial policy and targeted trade arrangements as increasingly important mechanisms shaping contemporary value chain governance. Government intervention should therefore prioritise capabilities that determine whether production can remain internationally competitive after financial incentives decline. These include logistics infrastructure, digital connectivity, technical education, research capability, supplier development, reliable energy systems, customs efficiency, and institutional stability. Corporate investment decisions should assess these structural characteristics rather than focusing disproportionately on temporary subsidies. A manufacturing location supported by generous incentives but lacking supplier depth or technical skills may remain strategically fragile. Sustainable rewiring requires locations capable of supporting innovation, productivity growth, quality improvement, and supplier upgrading over the long-term.

Public policy should also avoid treating extensive localisation as synonymous with resilience. Evidence indicates that widespread localisation can impose substantial economic costs while failing

to guarantee stronger stability. Namdar et al., (2025) estimate that broad localisation could reduce global trade by more than 18 percent and global real GDP by over 5 percent, while resilience does not consistently improve under such scenarios. Sawik (2025) similarly demonstrates that reshoring becomes economically attractive only under particular combinations of risk preferences, service requirements, cost structures, and government support. Yücesan (2025) reinforces the continuing relevance of internationally connected supply chains despite stronger deglobalisation pressures. Governments should consequently pursue selective strategic capability rather than comprehensive economic self sufficiency. Critical sectors may justify domestic capacity, strategic inventories, alternative suppliers, or trusted international partnerships, while less sensitive activities can continue benefiting from international specialisation. Policy coordination with industry is essential because governments require realistic information concerning technological requirements, supplier capabilities, qualification periods, and relocation costs. Industrial policy becomes more effective when it strengthens competitive ecosystems rather than attempting to reproduce every component of complex international networks domestically.

Finally, supply chain rewiring should be governed through an institutionalised process of continuous strategic recalibration. The geographical configuration that appears optimal under current tariffs, technologies, geopolitical relationships, and supplier economics may become unsuitable when these conditions change. Chang et al., (2025) demonstrate that geopolitical risk influences resilience through operational and financial channels, while Namdar et al., (2025) show that firms actively restructure their supply bases when upstream policy uncertainty increases. Dong et al., (2025) further establish the growing role of artificial intelligence in strengthening resilience under geopolitical uncertainty. Organisations should therefore conduct recurring network reviews covering geographical concentration, supplier criticality, technological dependence, alternative capacity, inventory exposure, logistics corridors, trade restrictions, and policy developments. Performance indicators should evaluate not only procurement cost but also recovery capability, concentration exposure, switching time, capacity flexibility, and the economic value of resilience investments. Scenario testing should examine how the network would respond if a major supplier, country, transportation corridor, or technology became unavailable. The results should guide investment, sourcing, inventory, and capacity decisions. Through continuous recalibration, supply chain geography becomes a dynamic strategic capability rather than a fixed organisational structure, allowing firms to preserve global competitiveness while adapting systematically to an increasingly fragmented and uncertain international business environment.

6. CONCLUSION

Decades of efficiency driven expansion created international supply networks of extraordinary scale, yet the same structures have also produced dependencies that are increasingly difficult to justify in an era of geopolitical rivalry, economic uncertainty, technological competition, and recurrent disruption. The central lesson emerging from the analysis is that supply chain strength can no longer be measured primarily through cost minimisation, geographical reach, or sourcing efficiency. What matters increasingly is whether firms can preserve access to specialised international capabilities while retaining sufficient flexibility to respond when critical relationships become commercially, politically, or operationally vulnerable. Reshoring, friendshoring, regionalisation, and supplier diversification have consequently gained strategic importance, but their value depends on how selectively and intelligently they are implemented. Moving production from one country to another

does not automatically create resilience, particularly when alternative locations continue to depend on the same upstream materials, technologies, logistics corridors, or specialised suppliers. The fundamental challenge is therefore to redesign international networks without destroying the productive relationships that originally made them competitive.

Resilience under these conditions requires a deeper understanding of where dependency actually resides. First tier supplier diversification may create an appearance of geographical flexibility while concealing substantial concentration further upstream. Critical materials, production technologies, specialised machinery, intellectual property, and intermediate components can remain concentrated within a limited number of countries even after final production has been relocated. This reality makes multi-tier visibility, dependency mapping, and selective redundancy increasingly important components of strategic supply chain management. Regional production portfolios offer a particularly promising direction because they allow organisations to distribute activities across complementary locations while retaining access to established industrial ecosystems. However, such strategies must avoid creating new concentrations in emerging manufacturing hubs where infrastructure, labour, logistics capacity, energy availability, and supplier development may struggle to accommodate rapid investment growth. Genuine resilience therefore depends not on the number of countries represented within a network, but on the independence, substitutability, scalability, and strategic value of the capabilities distributed across those locations.

Technological capability will further determine how successfully firms can convert geographical flexibility into sustainable competitive advantage. Automation can improve the economic feasibility of production in locations previously constrained by labour costs, while artificial intelligence, advanced analytics, and digital visibility can strengthen coordination across geographically dispersed operations. These technologies provide firms with greater capacity to identify vulnerabilities, anticipate disruption, evaluate alternative sourcing scenarios, and transfer production between locations when circumstances change. Government policy has an equally important role, particularly through investment in infrastructure, workforce capabilities, supplier development, digital connectivity, innovation ecosystems, and strategic technologies. Nevertheless, extensive localisation supported primarily by subsidies or protection cannot substitute for genuine productive capability. A location becomes strategically valuable when it can sustain competitive production through technological competence, institutional reliability, supplier depth, skilled human capital, and efficient connectivity to regional and international markets. Sustainable supply chain transformation must consequently align corporate geographical decisions with the long-term development of economically viable production ecosystems.

What ultimately emerges is not the end of globally connected production, but a fundamental change in the logic governing where and how international business is organised. Future networks are likely to become more selective in their dependencies, more distributed in their capabilities, and more deliberate in balancing efficiency against resilience. Firms that continuously reassess geographical concentration, supplier criticality, technological dependence, alternative capacity, and political exposure will be better equipped to respond to an international environment in which competitive conditions can change rapidly. The strongest organisations will neither pursue global integration without regard for vulnerability nor retreat into costly self sufficiency. Instead, they will construct adaptable networks that combine global specialisation with regional flexibility, technological

intelligence, and strategically justified redundancy. Supply chain rewiring therefore represents a transition from geography based predominantly on cost advantage towards geography shaped by capability, resilience, connectivity, and strategic choice. The enduring competitive advantage will belong to organisations that can manage this balance continuously, ensuring that global reach remains a source of strength rather than a source of uncontrolled dependence.

DECLARATIONS

1. Acknowledgement

The authors sincerely appreciate the academic environment and scholarly support provided by Universiti Poly-Tech Malaysia (UPTM) throughout the preparation of this article.

2. Conflict of Interest

The authors confirm that no competing interests exist that may have affected the development, interpretation, or presentation of this work.

3. Author Contribution Statement

Azahari Jamaludin: Developed the central concept, conducted the literature review, and prepared the initial manuscript.

Noraslinda Fauzi: Examined the literature on supply chain restructuring, contributed to the analytical discussion, and developed key strategic perspectives.

Hidayahtul Khusna Abdul Malik: Strengthened the critical discussion, formulated managerial implications, and contributed to manuscript revision and final editing.

All authors reviewed and approved the final manuscript.

4. Ethics Statement

The article was prepared in line with accepted academic and research integrity standards. As the work relies exclusively on existing scholarly literature and involves no primary data or human participation, ethical approval and informed consent were not applicable.

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