



PART 1

Read the text below and answer questions 1–13.

GLOBAL SUPPLY CHAINS: COMPLEXITY AND VULNERABILITY

A

Global supply chains are often spoken of as if they were neat, linear pipelines: raw materials become components, components become products, and products arrive with predictable timing. In practice, they behave more like complex networks with feedback loops. A single finished item may depend on dozens of upstream firms spread across multiple countries, each responding to its own costs, policies, and constraints. This architecture can deliver real advantages—lower prices, rapid scaling, and faster diffusion of innovation—because production is allocated to specialised hubs. Yet the same complexity produces hidden weak points. Minor disruptions can cascade across tiers, and the most critical dependencies may be invisible until something breaks. The paradox is that the features that make global networks efficient in stable conditions can make them fragile under stress.

B

One of the most persistent sources of vulnerability is opacity beyond the first tier. Many brands know their direct suppliers well enough to negotiate contracts and monitor delivery, but those suppliers rely on sub-suppliers for chemicals, packaging, specialised machinery, semiconductors, and logistics services. As a result, risk can be shared across competing firms without their awareness. A single sub-supplier might serve multiple “unrelated” brands, meaning a failure deep in the chain can create simultaneous shortages across markets. Verification also becomes harder as tiers deepen: capacity claims are difficult to audit, labour conditions may be concealed by intermediaries, and exposure to local shocks—power outages, flooding, political unrest—may not be reported promptly. Researchers therefore emphasise tiered dependency as a structural blind spot: the deeper the tier, the less visibility buyers have, even though the consequences of failure may be large.

C

Demand variability introduces another systemic problem because small signals at the consumer end can be amplified upstream. This is known as the bullwhip effect. Retail promotions, short-term discounts, or social media trends can produce temporary spikes in orders that are mistaken for lasting demand. Forecast errors then encourage wholesalers and manufacturers to over-order “just in case”, while safety-stock rules can further inflate purchase volumes. When warehouses later fill, cancellations arrive suddenly, leaving



upstream factories with excess inventory, unstable schedules, and rushed procurement. The result is a cycle of overtime surges, quality problems, and late deliveries. In such environments, a supply chain may appear “efficient” on paper, yet the volatility makes coordination harder and increases the probability of disruption.

D

For decades, many companies pursued lean systems and just-in-time replenishment to reduce warehousing costs and free up cash. The approach works when transport is predictable, suppliers are stable, and lead times remain short. But it removes slack. If one low-cost part is delayed at a port or held at customs, an entire assembly line can stop, turning a minor logistics issue into a major operational shock. This is not simply a trade-off between cost and inventory; it is a trade-off between smoothness and shock absorption. For that reason, some firms now treat buffer inventory as a deliberate form of insurance, held selectively for components that are hard to replace or that can halt production. The logic is not to stock everything, but to identify which inputs create the greatest vulnerability when missing.

E

Geography and policy further concentrate risk. Modern production is organised around chokepoints: a small number of major ports, key canals and border crossings, and a limited set of semiconductor fabrication hubs. Natural disasters can close transport corridors and disrupt energy supplies, while drought can reduce river shipping capacity and extreme storms can halt port operations. Policy can be equally disruptive. Tariffs, sanctions, export controls, and sudden regulatory changes can make a previously reliable input inaccessible overnight, even if factories remain intact. Additionally, “regulatory friction” can create delays without any dramatic event: new documentation requirements, compliance checks, or shifting customs rules may slow goods enough to create shortages downstream. In this sense, vulnerability is not only technical; it is also geopolitical and administrative.

F

Digital tools promise better visibility across this complexity, but they can also create false confidence. Real-time tracking, automated planning systems, and supplier portals can speed up responses when disruptions occur, yet data quality is uneven across tiers and suppliers may resist sharing commercially sensitive information. Even accurate dashboards cannot overcome structural constraints. If there is no spare capacity, no qualified second source, or no approved substitute material, analytics will merely confirm the shortage. This is why many resilience programmes start with supplier mapping: building a clearer picture of upstream dependencies, identifying single points of failure,



and validating which firms and facilities truly matter. Without that groundwork, technology risks becoming a sophisticated interface over incomplete knowledge.

G

As disruptions have become more frequent, many organisations are redesigning supply chains around resilience rather than maximum short-term efficiency. Common strategies include regionalising some production where feasible, standardising components so substitutes can be used without major redesign, and negotiating “surge” agreements that reserve capacity in emergencies. For high-risk inputs, firms often adopt dual sourcing to reduce dependence on one supplier or one geography, even if this increases unit costs. Sustainability and compliance pressures add another layer: buyers may require audited traceability for materials linked to labour or environmental concerns, which can strengthen governance but also increase the consequences of weak documentation. Over time, the most robust organisations treat disruption as routine rather than exceptional. They monitor leading indicators, maintain clear escalation paths, and run structured after-action reviews when incidents occur. These reviews aim to identify the true bottleneck—whether a missing component, a customs delay, or a single overloaded supplier—and then update playbooks, contracts, and design standards. In this view, resilience is not a one-off project but a continuing capability built through learning.

Questions 1–5

Choose the correct heading for each paragraph.

List of Headings

- i** Digital tracking that removes the need for redesign
- ii** How consumer tastes eliminated global trade
- iii** Why deeper tiers are harder to see and manage
- iv** The limits of lean systems during transport delays
- v** Complexity as both advantage and hidden weakness
- vi** When small demand shifts create large upstream turbulence
- vii** The case against any form of inventory
- viii** How geography and policy concentrate risk

1 Paragraph A

2 Paragraph B

3 Paragraph C

4 Paragraph D



5 Paragraph E

Questions 6–9

Choose **TRUE** if the statement agrees with the information given in the text, choose **FALSE** if the statement contradicts the information, or choose **NOT GIVEN** if there is no information on this.

6 The passage suggests that firms usually have full knowledge of their sub-suppliers.

7 The bullwhip effect can be intensified by promotions and forecasting problems.

8 The passage states that digital dashboards alone can resolve shortages when capacity is limited.

9 The passage gives exact figures for the cost of audited traceability in supply-chain management.

Questions 10–13

Complete the table below. Choose **NO MORE THAN TWO WORDS** from the text for each answer.

Building supply-chain resilience

Phase	Measure	Purpose
Preparation and shock absorption	Selective 10	Protect production when critical components are delayed.
	11	Reveal upstream dependencies and identify single points of failure.
	Standardised components	Allow substitutes to be used without major redesign.
	12	Reduce reliance on one supplier or one geographical area.
Learning after disruption	Structured 13	Identify the true bottleneck and update playbooks, contracts and design standards.

Answer Key

1. v



2. iii
3. vi
4. iv
5. viii
6. FALSE
7. TRUE
8. FALSE
9. NOT GIVEN
10. buffer inventory
11. supplier mapping
12. dual sourcing
13. after-action reviews