Resilient Supply Chains During and After the Covid-19 Pandemic

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Resilient Supply Chain

The ability of supply chains to cope with supply chain risks, manage the disruption caused by them and to recover to their original state or even to a more desirable one (Christopher and Peck, 2004)

• Preparation
• Response
• Recovery &/ transformation
Example: Fukushima earthquake in Japan

The 2011 Fukushima Daiichi nuclear leak

• “shaved off bits of activity throughout the Japanese economy, making every supply chain in Japan less efficient”

• “It affected suppliers and customers of disaster-stricken firms, and then continued cascading through the economy, disrupting firms that had no direct business link to the affected area,”

“Natural disasters can send powerful shocks rippling through the global economy” © Getty Images
What happened 2020?

Chart 3: Merchandise exports and imports by region, 2012Q1-2020Q2
Volume index, 2012Q1–100

Wto.org
Consumers and supply chains
China’s lockdown and supply chains

• China’s share in global exports: 14.7% in 2020
• The crisis has intensified the competition for valuable supply sources in several industrial sectors
  • Component and labor shortages
  • Production capacity reductions
  • Factory closures
  • Customer pressure for prioritization
How about logistics?
Supply chains after the pandemic
What happened next? (2021)

Suez Canal

• Ever Given
• 23-29 March 2021
• 12% of world’s seaborne trade is passing annually
The impact on supply chains

- Average 80-90 ships per day
- Blockage cost: $9.6bn/day, $400m/hr
- Oil tankers, dry bulks and container ships
- Impact on oil prices due to delays
What happened next? (2022)

Food shortage
Russia and Ukraine supply (of globally traded)
• 28% wheat
• 29% barley
• 15% maize
• 75% sunflower oil
The impact on supply chains

- Soaring grain prices – couldn’t just farmers elsewhere in the world make up the shortfall?
  No!
- Shrinking profit margins due to surging prices of fertiliser and energy
- These are farmers’ main costs and both markets are disrupted by sanctions and the scramble for natural gas
- Politicians response: more than one-fifth of all fertiliser exports are restricted

Source: U.S. Bureau of Labor Statistics
What happened next? (2022)

European energy crisis
Europe’s dependence on Russian gas
The impact on supply chains

Germany is the world’s fourth-biggest economy and its third-biggest exporter of goods.

German industry’s biggest problem is the spiralling cost of energy.

Shutting down factories: ArcelorMittal, Stickstoffwerke Piesteritz, …

Stefan Kooths of the Kiel institute forewarns that “an economic avalanche is rolling towards Germany.”
Yesterday’s supply chains

To predict what is going to happen in the future, we need to understand the structure of our modern supply chains.
Future supply chains?

Globalization
- Complex
- Networked
- Just-in-time
- Lean
- Consolidation
- Outsource

Localization
- Simple
- Pooled
- Diversified
- Buffers
- Proximity
- KPIs
  - Resilience
  - Responsiveness
  - Reconfigurability
- Insource
- Nearsource

KPIs
- Cost
- Quality
- Speed
What will happen?

IDEAS

The Modern Supply Chain Is Snapping
The coronavirus exposes the fragility of an economy built on outsourcing and just-in-time inventory.

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Will the Coronavirus Bring the End of Globalization? Don’t Count on It

The Covid-19 pandemic is closing borders and disrupting supply chains, but it can’t stop our long-term movement toward a more interconnected world.