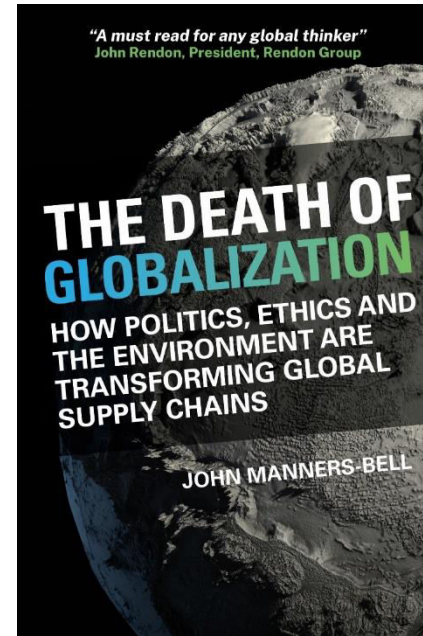


The Death of Globalization

The Challenge of Green Legislation to International Shipping

Professor John Manners-Bell
Foundation for Future Supply Chains

Amsterdam 10 October 2023

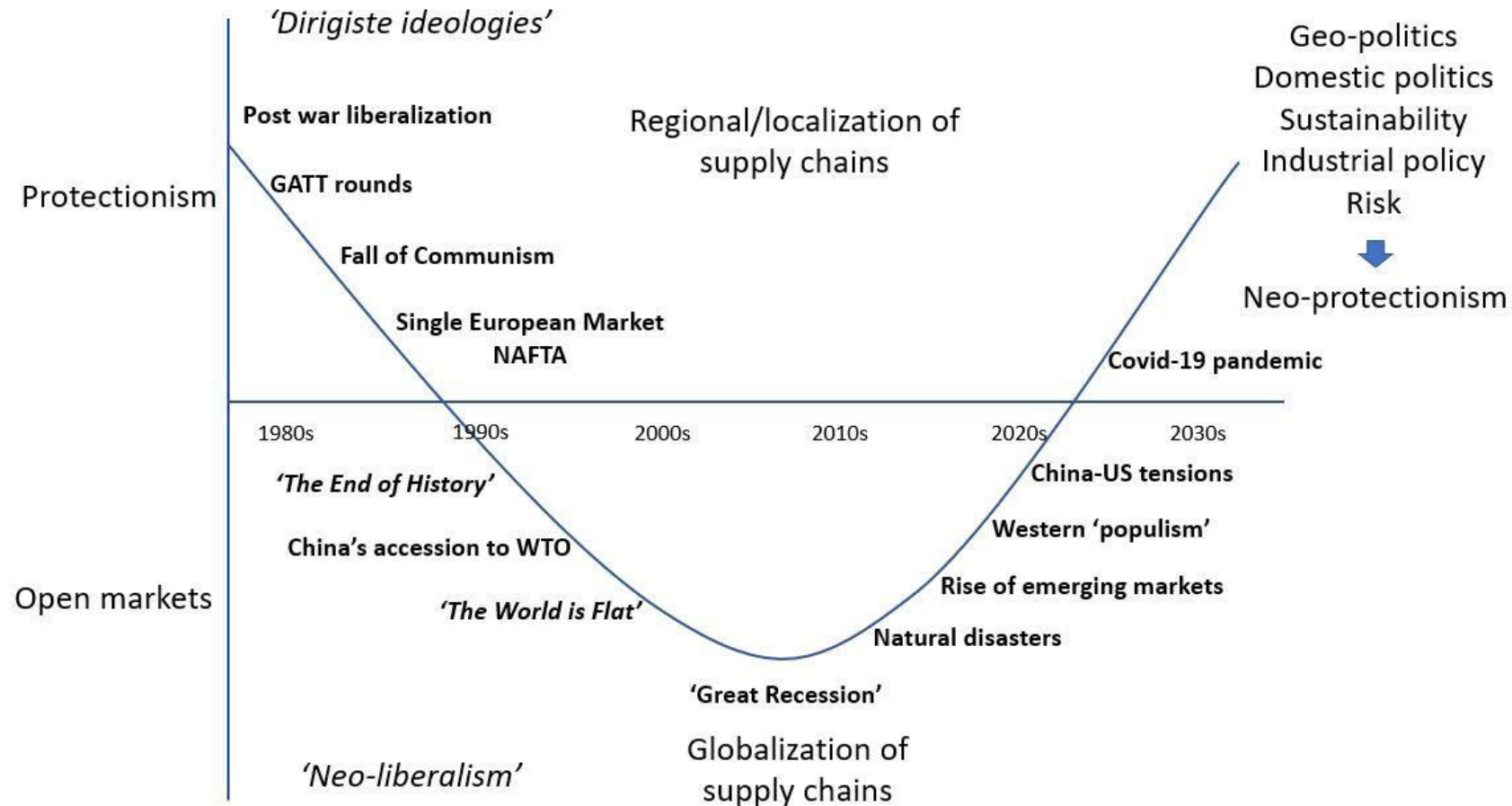


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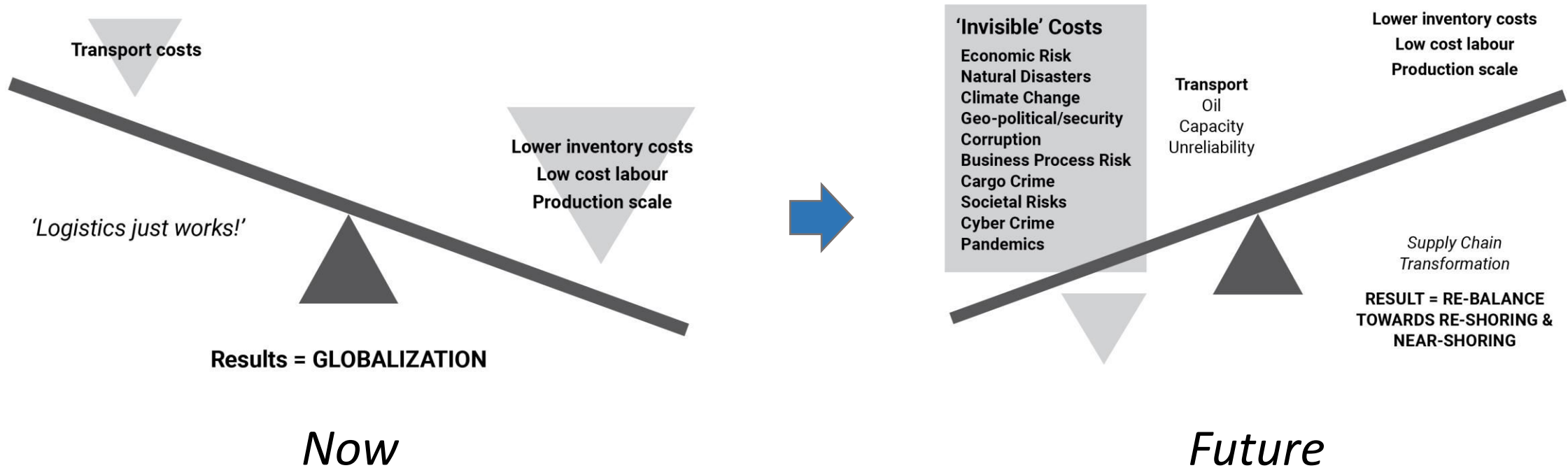


Supply chains 'driven by politics and ideology'

Supply chains developed on economic imperatives – not any more!



Changing Economic Priorities



Forces influencing supply chain strategy



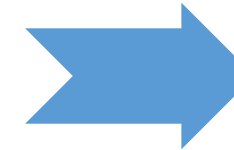
For many years there have been concerns that the growth of China's manufacturing sector has been at the **expense of domestic jobs and economy.**



**RUST BELTS
RE-SHORING**



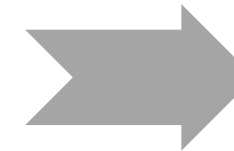
The West has countered with a range of tariffs and non-tariff barriers to trade with China.



**NEAR SOURCING
'CHINA PLUS'**



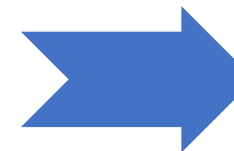
China has used globalization to project soft power. The West is trying to build alternatives to China's Belt & Road.



**ETHICAL SOURCING
FRIEND-SHORING**



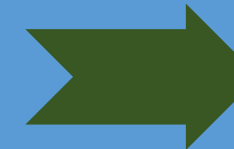
Most recently US has placed controls on the export of advanced technologies to China, threatening growth of high tech sector



**DUAL SUPPLY
CHAINS**



Green Legislation is making it more difficult and costly to make and ship goods around the world whilst ethical considerations playing increasing role in sourcing.



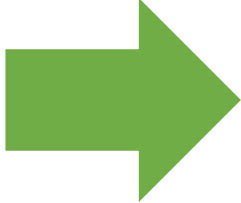
**PRECAUTIONISM
ETHICAL SCM**

Automation and 3D Printing

- Automation will reduce the importance of low cost labour
- Trend will be accelerated by Covid
- **Labour forces** now seen as **major risk** in manufacturing and warehousing
 - Robots are getting cheaper
 - 3D printing is getting faster
- E-commerce solutions require much higher levels of warehouse function intensity, a good fit for automation efficiencies.
- Supply chain consequence: in medium-term more manufacturing will be re-shored and fewer inter-continental movements of goods.



Environment: green legislation to protect and support industry

- The development of **global value chains** based on low cost labour and cheap transport stands accused of **generating unsustainable levels of carbon emissions**.
 - Manufacturers are also accused of '**carbon leaking**' – using suppliers based in countries with lower environmental standards and hence cheaper costs.
 - As a policy response EU is:
 - making shipping more expensive through **Emissions Trading Scheme**
 - Imposing **levies on imports** with high carbon footprint.
 - The US is subsidising 'green tech' manufacturers based in the country through the **Inflation Reduction Act**.
- 
- Barriers to international trade
 - Increased regionalization of trade flows
 - Discrimination against Emerging markets
 - Localization of manufacturing
 - Cost pressure on international transportation

'Precautionism': The Impact of Carbon Border Adjustment Mechanism

- CBAM: 'Protectionism' or 'Precautionism'?
- Part of 'Fit for 55' package – the target to reduce carbon emissions by 55% relative to 1990 levels
- Encourage partners in the world 'to join the EU's climate efforts'.
- 'Levelling the playing field' for manufacturers which source goods from less carbon-emitting suppliers or using cleaner forms of transport.
- But will hurt emerging markets through barriers. E.g. EU itself says it would increase the cost of Mozambique's aluminium exports per tonne by 39%; GDP fall by 1.6%.

- *Protectionism – Government erected barriers to international trade **to protect companies***
- *Precautionism – Government erected barriers **to protect people and environment***

Increasing shipping costs

Emission Trading Scheme (2024)

- For a vessel carrying 5,000 TEUs between EU and Asia over a year, the cost could total about €810,000 in 2024 (DNV) rising to €2 million in 2026.
- DNV estimates additional costs of €10 billion a year after 2026

Carbon Tax

- Discussed at IMO, World Bank suggest that tax could raise \$50-60 billion
- Slow steaming alternative also carries unseen costs to inventory



10 billion a year

Cost of ETS to industry



2 million a year

Cost per 5000 TEU ship

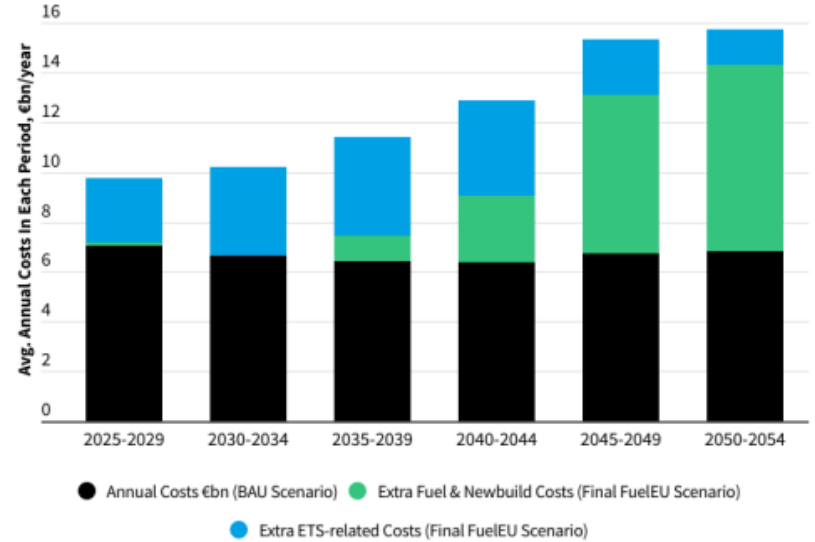


50-60 billion a year

Cost of carbon tax

The impact of green e-fuels on shipping

- **FuelEU Maritime (FEUM) Regulation (2025)**
- The EU intends to incentivize renewable fuel use between 2025 to 2034 by setting targets for reducing the yearly average GHG intensity of the energy used by a ship or fleet.
- They will provide credits for ships using renewable fuels of non-biological origin, such as e-fuels produced using renewable electricity.
- On 15,000 TEU ship Asia/Europe round trip, green methanol at \$1,945/teu estimated at 54% higher than the average of LNG, high sulphur with scrubber and low sulphur (ABS).
- But free of carbon taxes and ETS costs



Source: T&E containership fuel optimisation model (2023), scenarios 1A & 2A. Note: costs do not include required investments in energy efficiency technologies, non-machinery OPEX, or other costs.

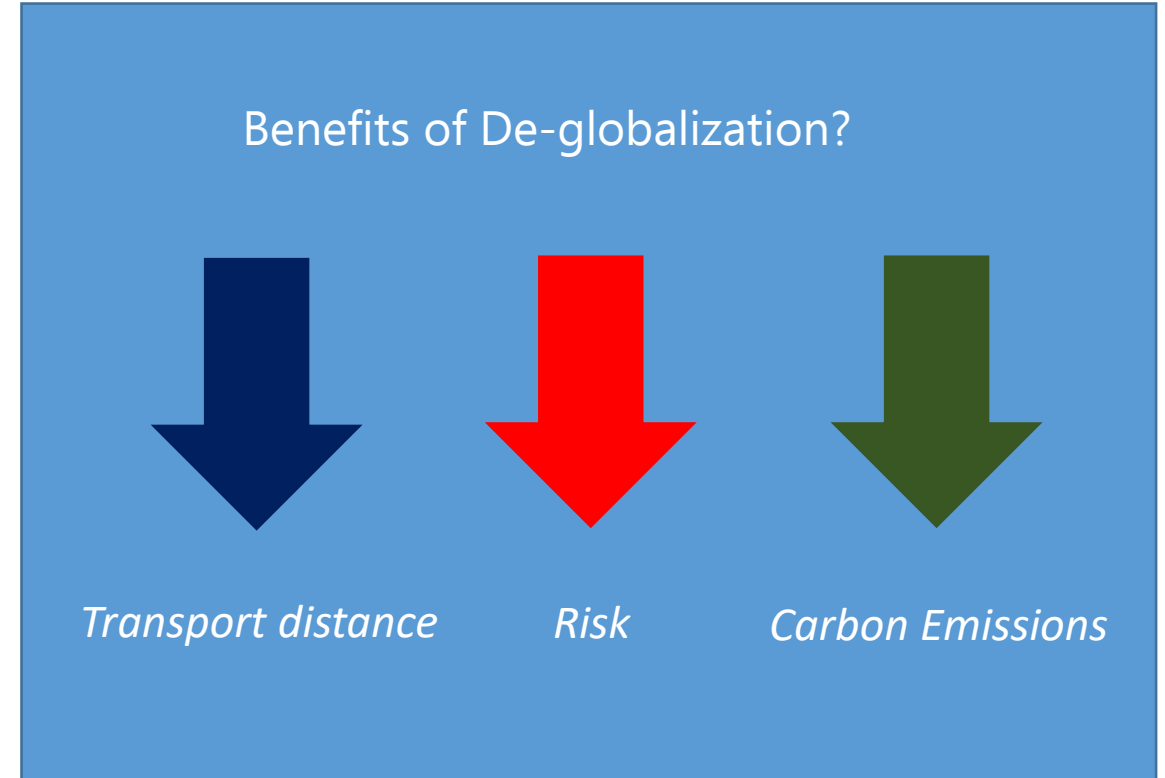
Consequences of the Inflation Reduction Act

- President Biden's \$739 billion package to support US green transition.
- Encouraging migration of 'Industry 4.0' production to the USA through subsidy.
- \$7,500 subsidy for each EV manufactured in the US.
- Fears that European manufacturers will move substantial parts of their production and supply chain to the USA.
- National rather than international or global supply chains will develop



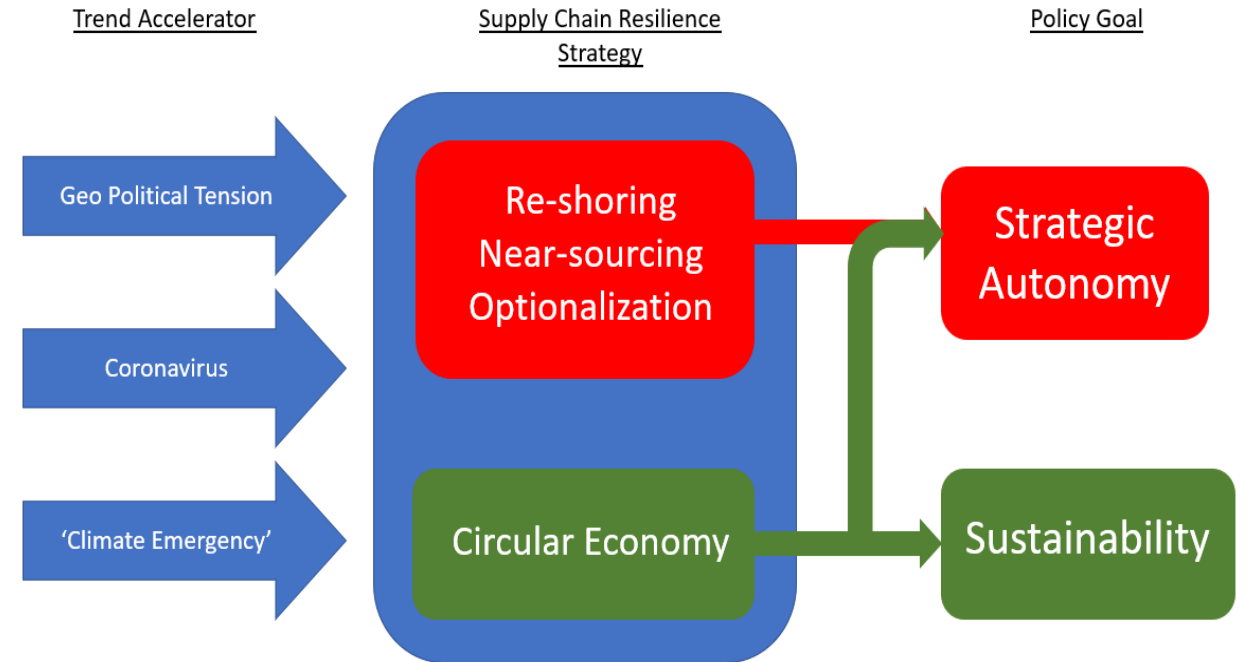
The search for new forms of 'value'

- Green legislation as it affects the supply chain will lead to a search for environmental and societal 'value'.
- This will have implications in terms of where the value adding process will take place.
- New processes will develop and others will be migrated to regions or countries which have a lower carbon footprint or better environmental and ethical practices.
- Will reducing supply chain risk by re-shoring also reduce emissions? Possibly.



Circular supply chains – strategic impetus

- Two elements of Circular Supply Chains:
 - **Strategic Autonomy**
 - **Sustainability**
- International trade volumes reduce due to a combination of:
 - increase in supply of materials/products in circulation
 - reduction in demand as asset use intensifies
 - purchase of 'second-hand' products becomes more widely acceptable
 - trade barriers: Carbon Border Adjustment Mechanism.



Conclusion

- Strong likelihood of fragmented supply chains developing centred on China; US and Europe in some sectors due to political forces.
- More re-shoring/near-sourcing likely due to:
 - Narrowing differential in labour costs
 - Increasing automation
 - Trade barriers and local subsidies
 - Security concerns
 - Increasing prioritization of ethics and sustainability
 - National policies to capture supply chain value add
- Held back by:
 - High energy costs
 - Lack of production/labour force scale and know how in developed markets

Intelligence tailored to the supply chain and logistics industry

Insight drives strategy – if you would like to know more about our global or local logistics insights please contact:

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