

The 2022 World Manufacturing Report

Redesigning Supply Chains in the New Era of Manufacturing

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Scientific Chairman – World Manufacturing Foundation





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REDESIGNING SUPPLY CHAINS IN
THE NEW ERA OF MANUFACTURING

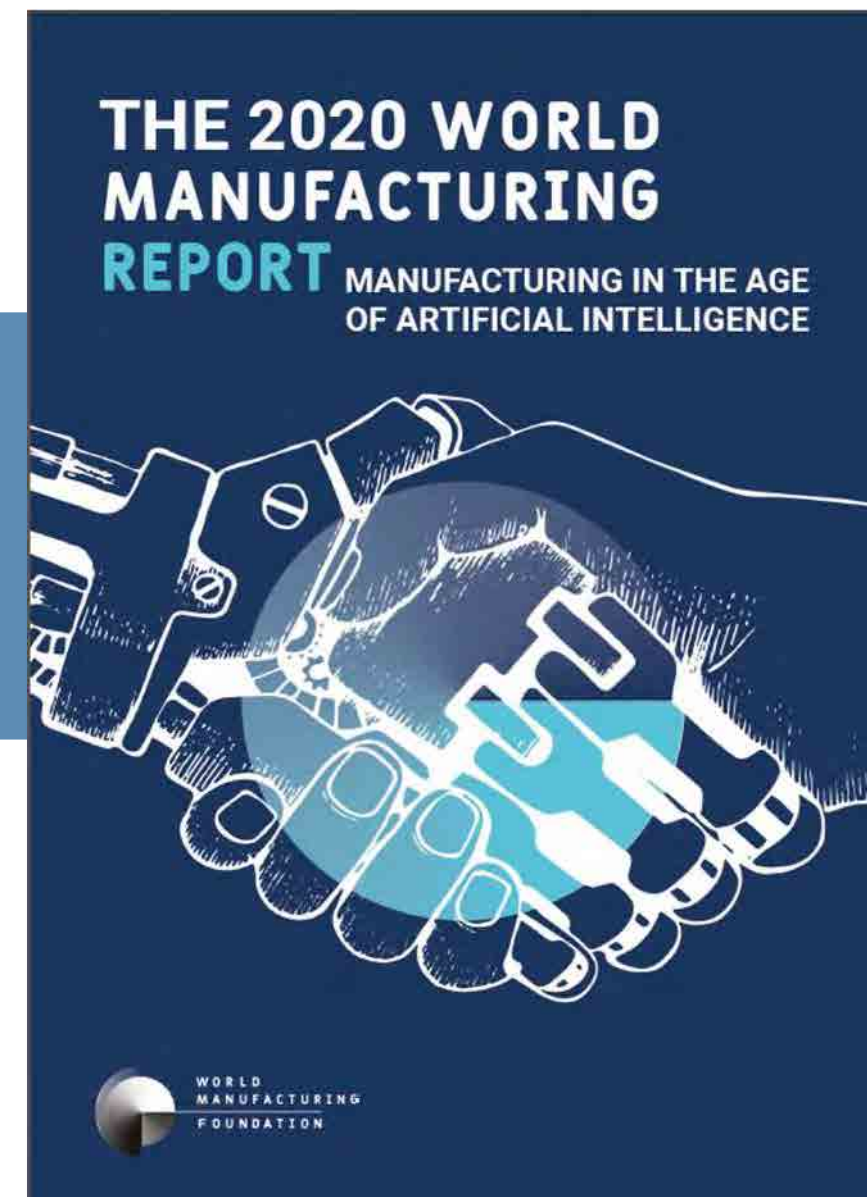
The World Manufacturing Report THROUGH THE YEARS



2018



2019



2020



2021



2022



Nothing Happens without Manufacturing



Manufacturing value added represents **17.0%** of the **global gross domestic product (GDP)**

(World Bank. (2022))



The manufacturing sector **directly employs 13.6% of workers**, ranging from 6.2% in low-income countries to 16.9% in upper-middle-income countries

(International Labour Organization. (2022))



Trade in manufactured goods represented **71% of world merchandise exports** in 2020, equal to US\$12.1 trillion out of a total of US\$17 trillion

(World Trade Organization. (2021))



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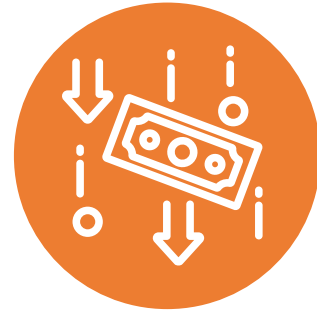
The Global Megatrends



The Global Megatrends



The global economic growth is slowing



The inflation is rising



The global trade volumes are projected to decrease



The global labour market recovery is a risk



The consumers' confidence in the state of the economy and their own financial stability are decreasing



The end of hyperglobalisation moving to “slowbalisation”



Climate Change and Sustainability



Rise of nationalist politics and protectionism



The evolving consumers' needs



Transformation of the job market

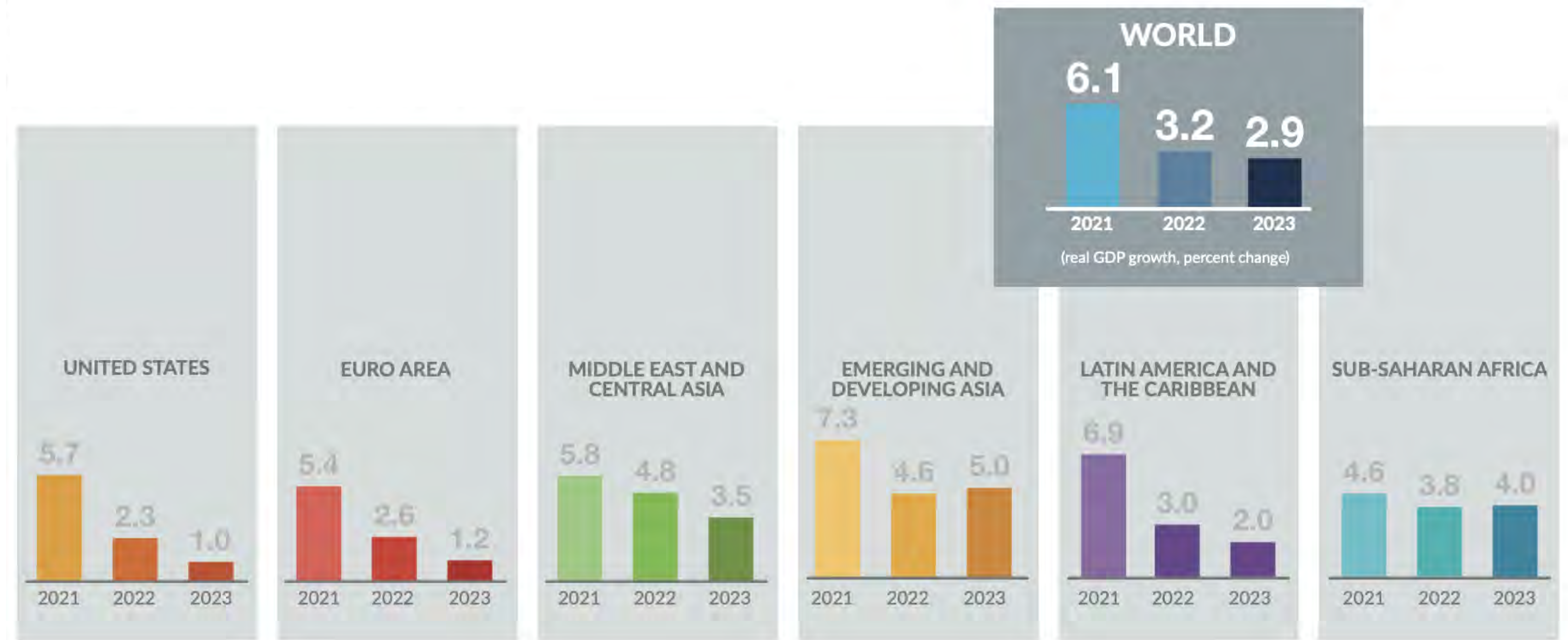
The Global Megatrends



The global
economic growth
is slowing

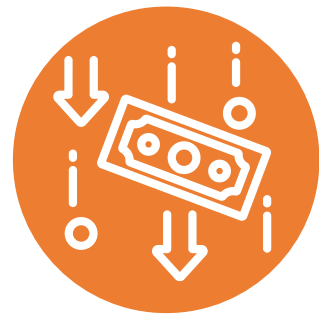
Real GDP Growth by Region (percentage change)

(Sources: IMF, World Economic Outlook Update, July 2022)





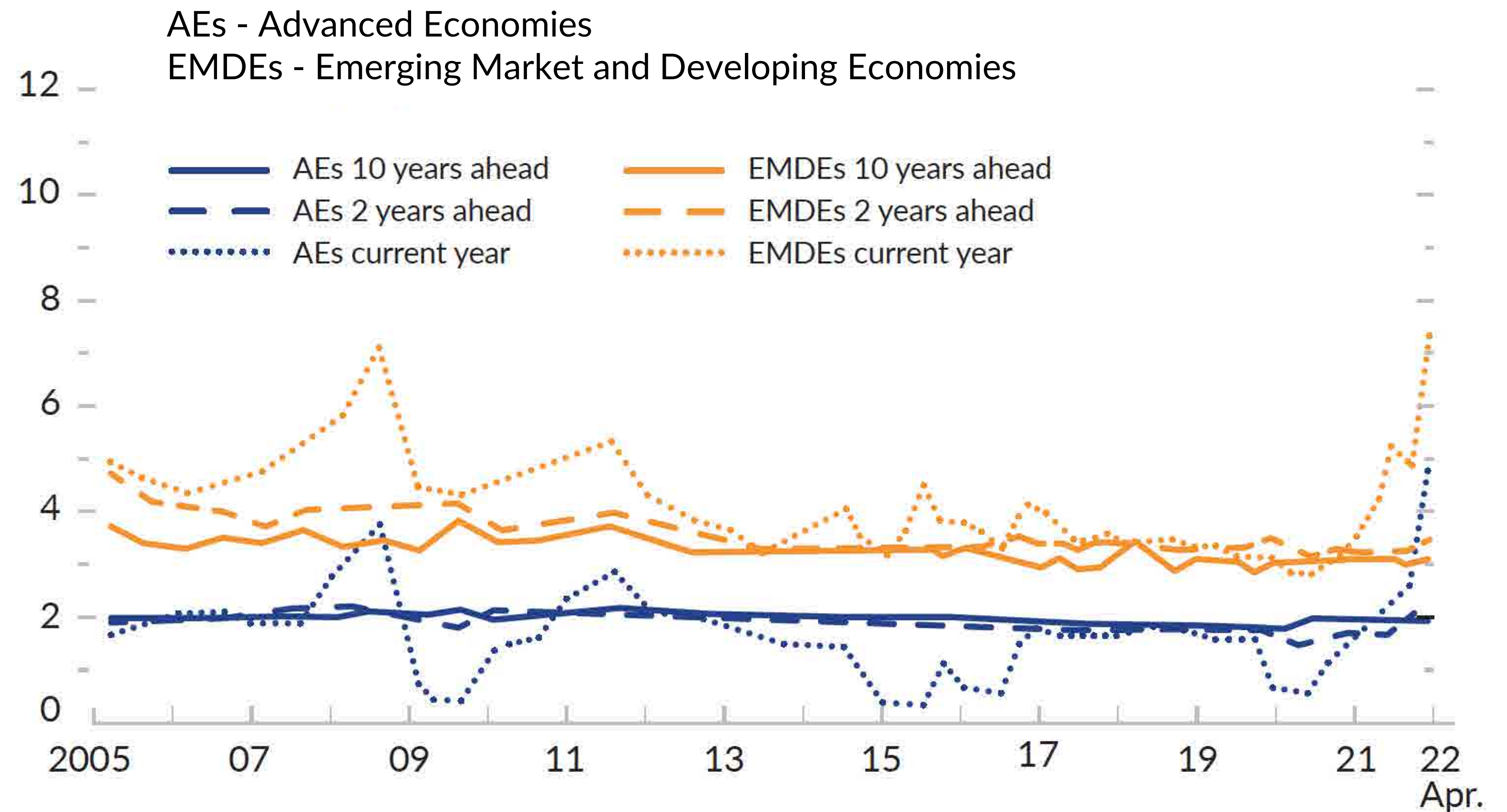
The Global Megatrends



The inflation is rising

Longer-Term Inflation expectations

(Sources: IMF, World Economic Outlook Update, July 2022.)





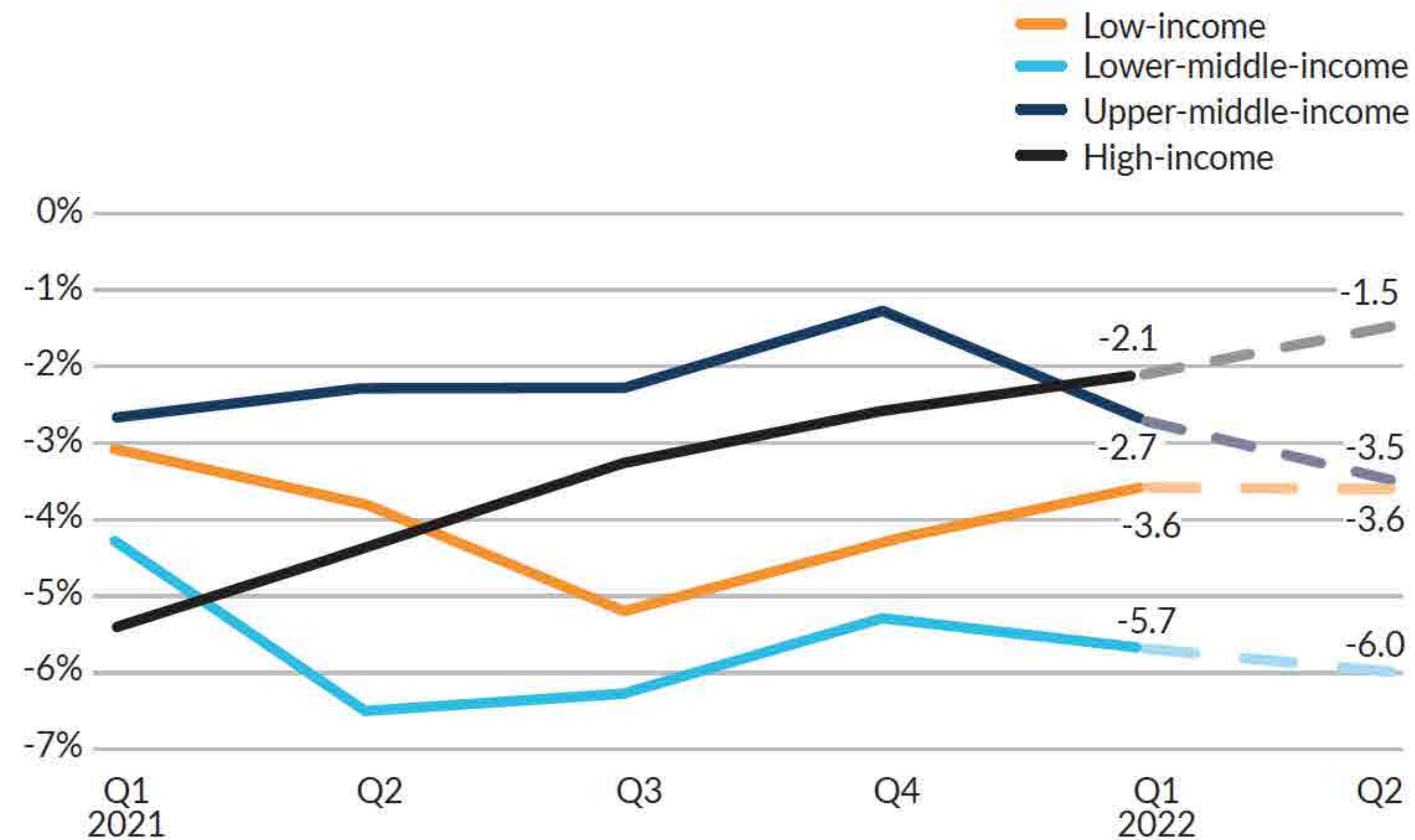
The Global Megatrends



**The global labour
market recovery
is at risk**

Change in global hours worked relative to 2019 Q4, by country income group (percentage)

(Sources: ILO Monitor on the world of work, Ninth Edition)





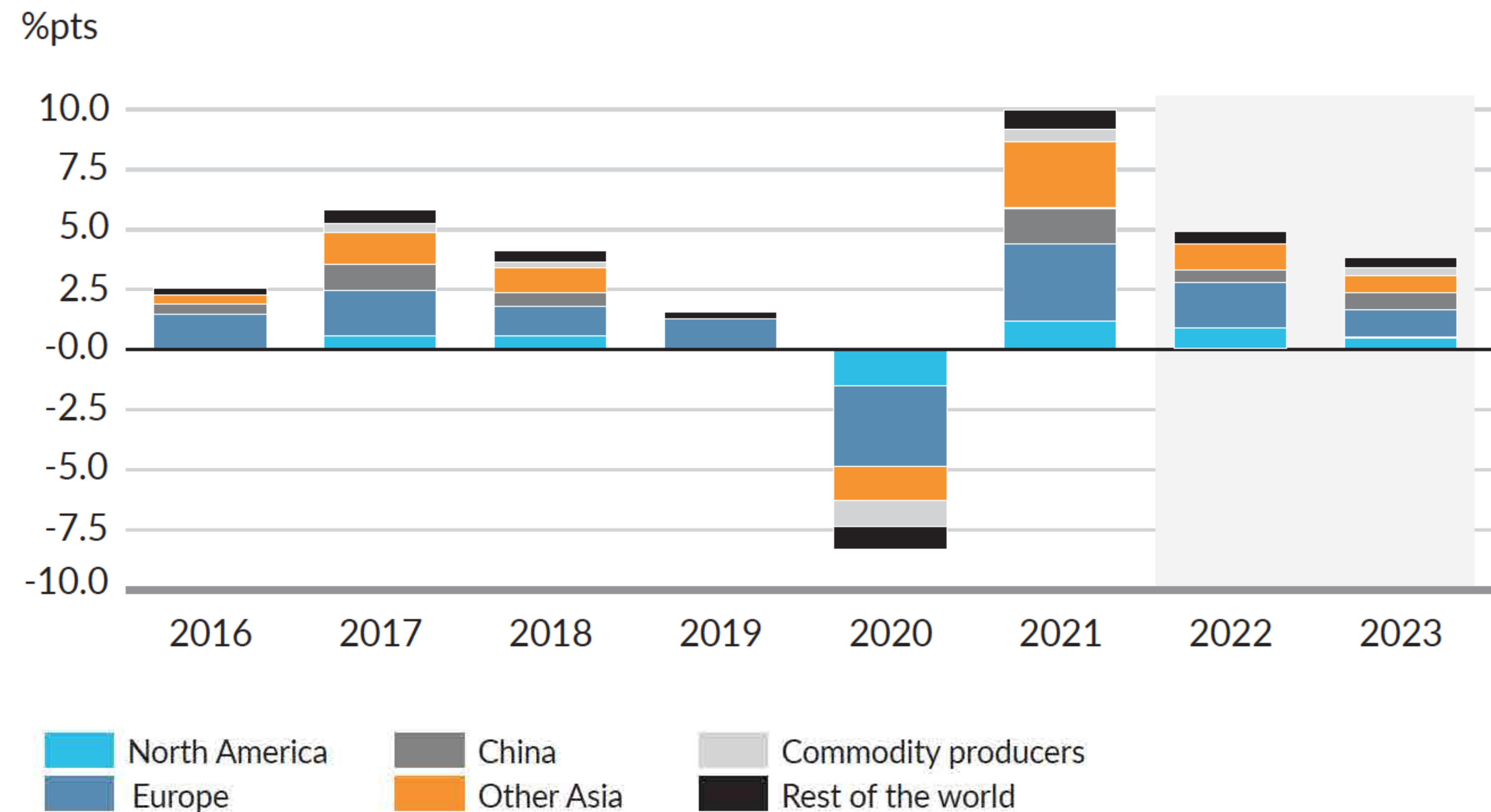
The Global Megatrends



The global trade volumes are projected to decrease

Contributions to annual change in global trade volumes

(Source: OECD Economic Outlook 111 database; and OECD calculations)





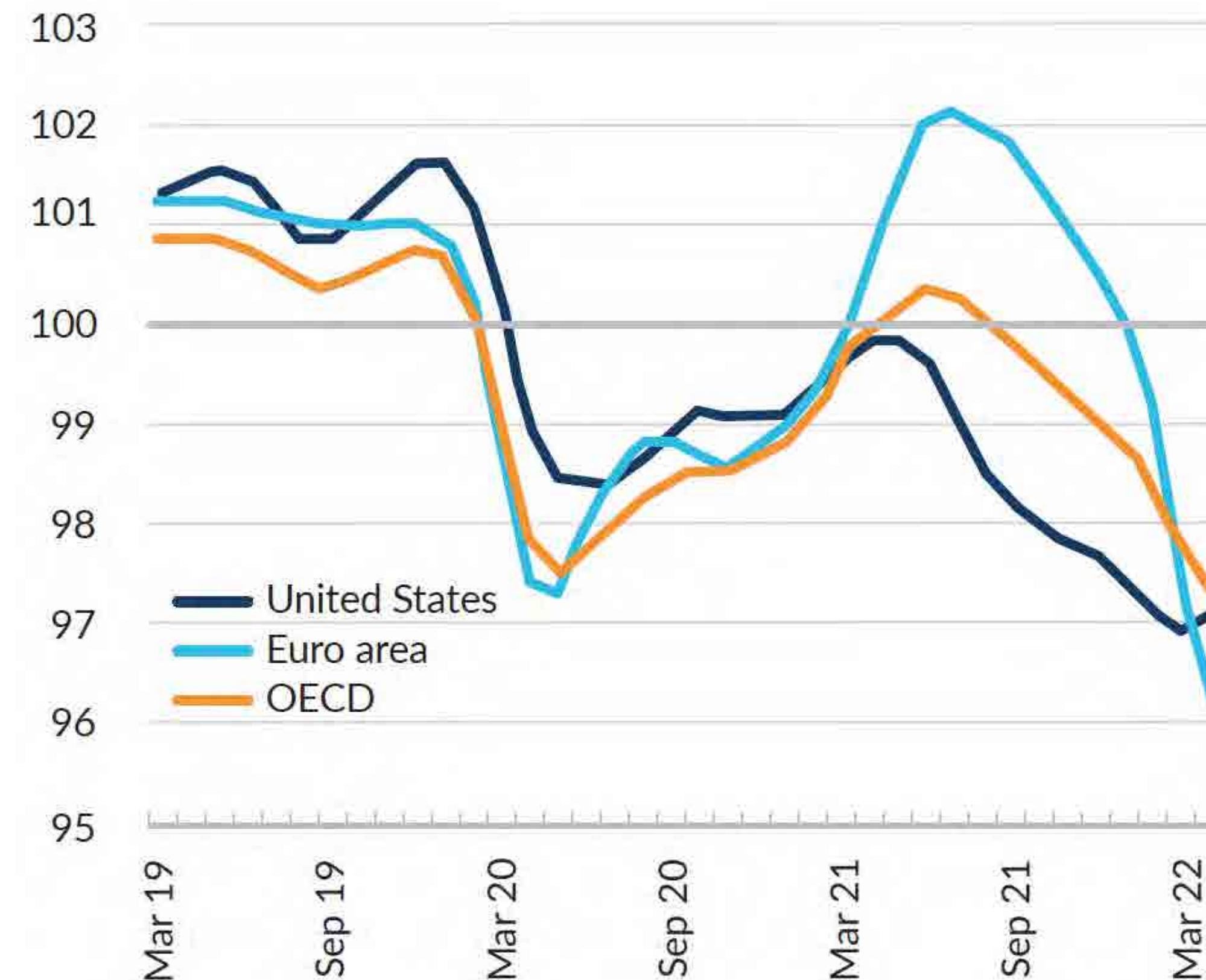
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The consumers' confidence in the state of the economy and their own financial stability are decreasing

Consumer Confidence (OECD standardised indicator, long-run average = 100)

(Sources: OECD Economic Outlook, Volume 2022 Issue 1)





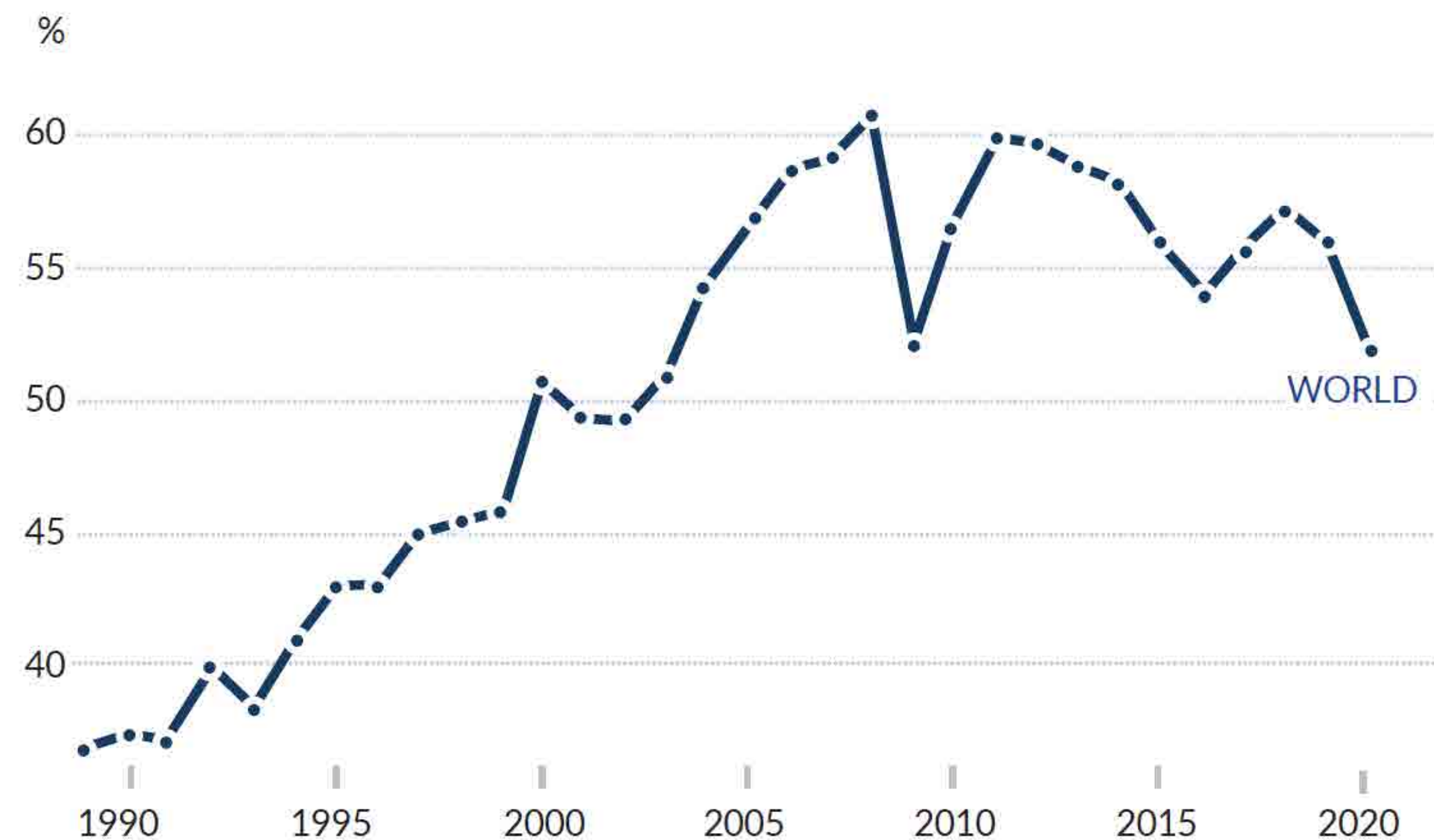
The Global Megatrends



The end of
hyperglobalisation
moving to
“slowbalisation”

Exports of goods and services (% of GDP)

(Source: World Bank national accounts data, and OECD National Accounts data files)





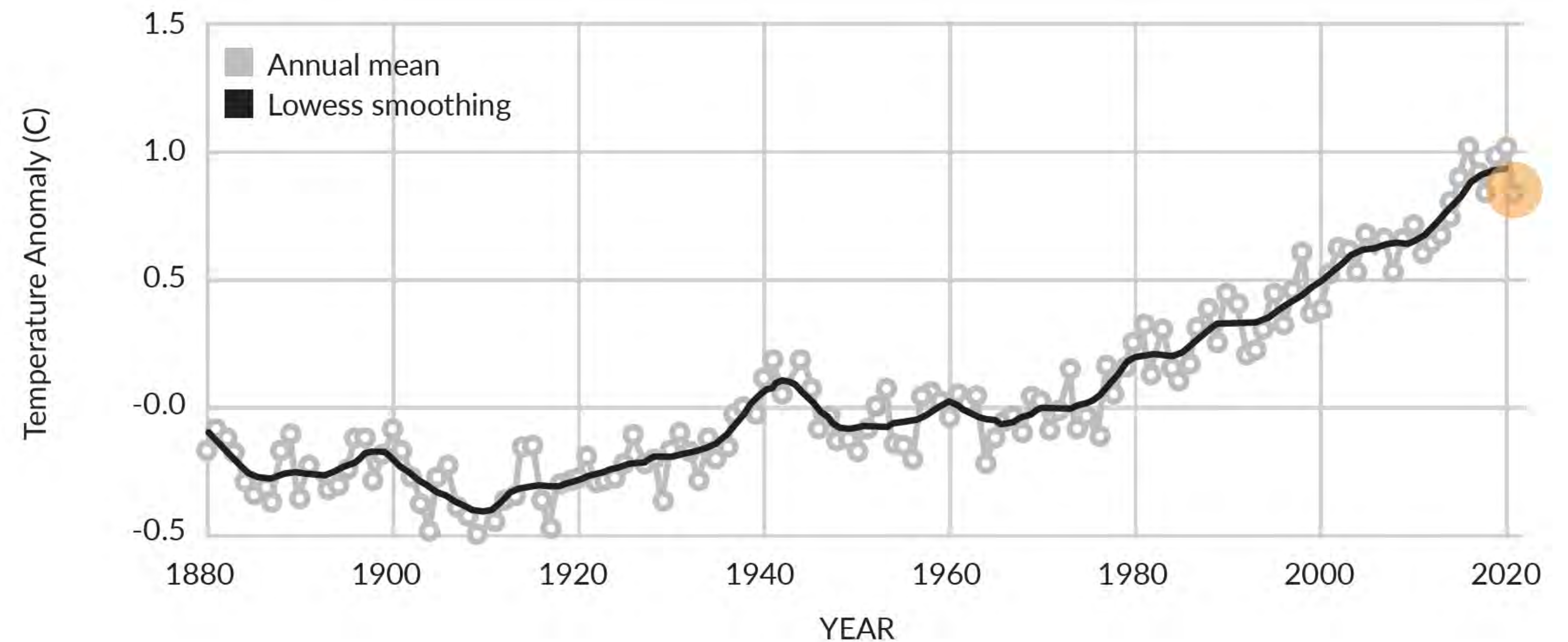
The Global Megatrends



Climate change and sustainability

Global Land-Ocean temperature index

(Source: NASA.)

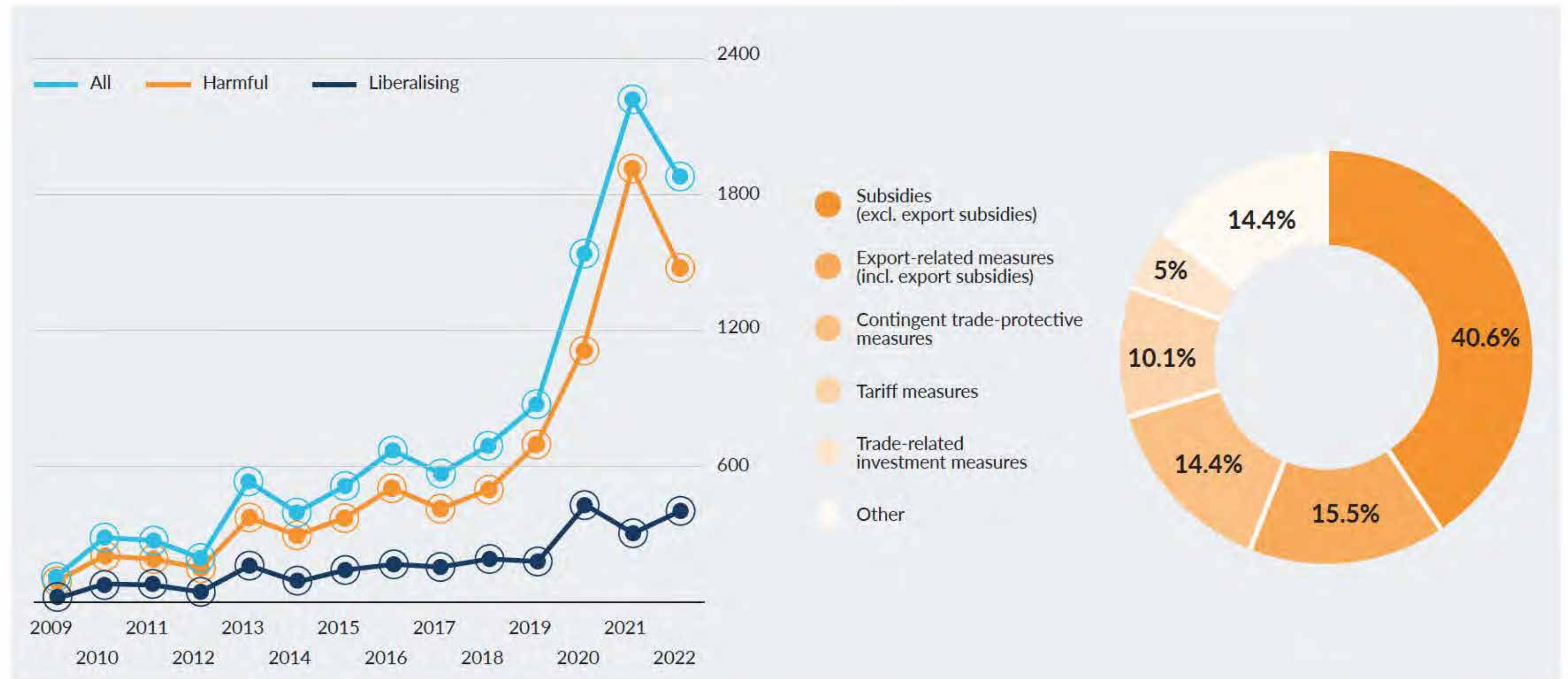


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Rise of nationalist politics and protectionism

New harmful trade interventions per year and policy instruments uses (Source: Global Trade Alert database.)





The Global Megatrends



The evolving consumers' needs

- Increased use of online channels to buy goods and services
- Mainstreaming of the Metaverse
- Green activism and low-carbon lifestyles
- Prioritisation of authenticity and social issues by younger consumers
- Support for local products and services
- Rising demand for activities and products that can support mental and physical health



The Global Megatrends



Transformation of the job market

- Complex skills definition
- Need to transfer women into a balanced workforce
- Increasing relevance of Equity, Diversity, and Inclusion



Why redesigning supply chains in the new era of manufacturing?



To understand how global megatrends may influence the manufacturing sector and its supply chains



To face the disruptive events impacting on manufacturing companies



To be prepared at Supply Chain level to eventually anticipate potential future disruptive events



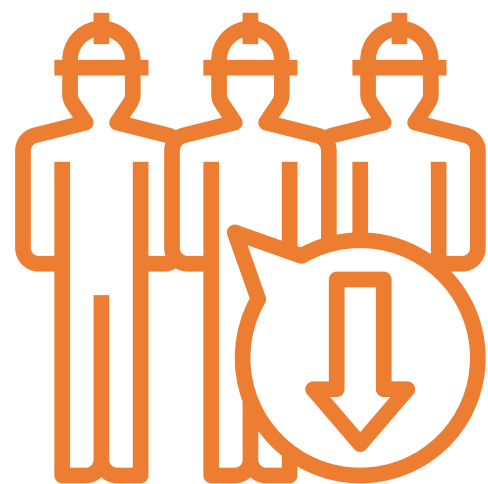
To ensure to keep under control all the key resources of manufacturing sector including the workforce



Global challenges not within the direct Supply Chain's Control



**Limited availability of
critical raw materials**



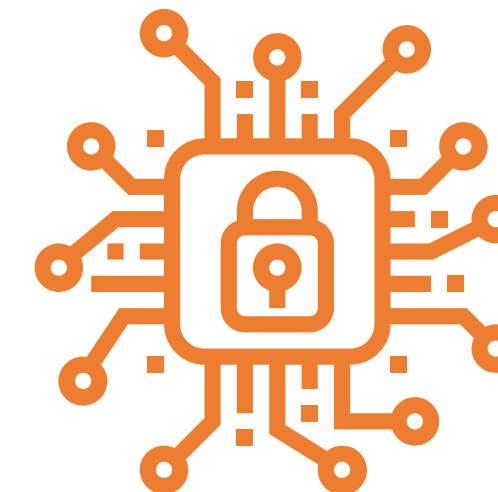
**Employee and workforce
shortages**



**Limited availability of
suppliers**



Skills crisis



**Cybersecurity and cyber
attacks**



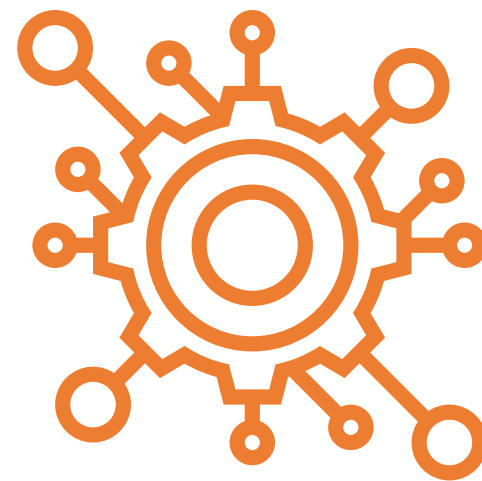
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Global Challenges within the Supply Chain's Control



**Digital infrastructures
and data exchange**



**Interoperability between
different systems**



**Communication between
supply chain entities**



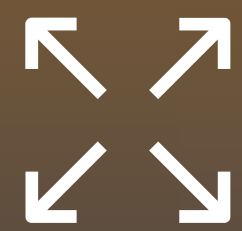
Small and Medium Enterprises challenges

Some of the most common challenges faced by SMEs come with the increased competition in changing markets, rapid technological changes and the reduced access they inherently have to knowledge and resources.

(Source: Integrating SMEs into Global Value Chains: Challenges and Policy Actions in Asia By ADBI, ADB)



Facing a lack of resources (financial resources and skills)



Lack of economies of scale



Higher costs due to smaller number of transactions



Lack of information, knowhow and experience due to lack of networks



Small and Medium Enterprises challenges



Inability to compete with large partners at R&D level



Lack of entrepreneurial capacity



Missing incentives to digitally transform



Pressure to provide data in real-time and automated using specific standards



Cybersecurity



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Key Takeaways

For the future of Manufacturing



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Key Takeaways for the Future Manufacturing

(Source: World Manufacturing Foundation)



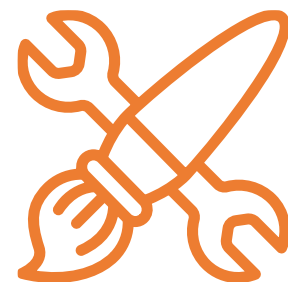
Cognitive Manufacturing



Circular Manufacturing



**Global Risks-Resilient
Manufacturing**



**Hyper-Personalised
Manufacturing**



**Rapidly Responsive
Manufacturing**



Inclusive Manufacturing



Key Takeaways for the Future Manufacturing

(Source: World Manufacturing Foundation)



Cognitive Manufacturing

- Promote AI to support resilient supply networks
- Utilise AI to track and respond to supply network disturbances
- Exploit AI to improve daily operations



Circular Manufacturing

- Minimise effect and encourage firms to look into new circularity prospects
- Enable cooperation among relevant stakeholders in building circular value chains
- Facilitate information sharing in the value chain
- Track the flow of materials and/or products in different stages of the value chain



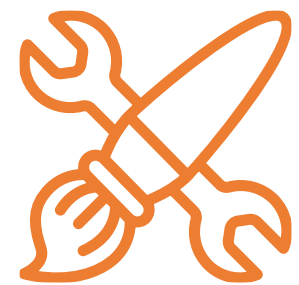
Global Risks-Resilient Manufacturing

- Combine the efforts of several players from different sectors and across various governance levels
- Understand the actual problems that businesses encountered during the crisis and the policies that can address such problems
- Build resilient global value chains through effective policies
- Diverse sourcing and digitisation are key to building stronger and smarter supply chains
- Utilise new demand management strategies to create robust supply chains



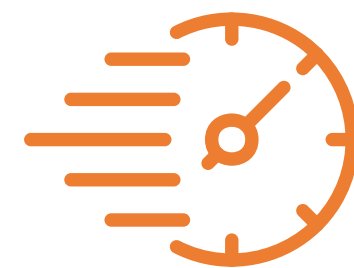
Key Takeaways for the Future Manufacturing

(Source: World Manufacturing Foundation)



Hyper-Personalised Manufacturing

- Hyper-personalisation commands a certain closeness with, and to, the customer
- The post-COVID future of customer involvement in retail is hyper-personalisation
- Customise for Local and Global Markets



Rapidly Responsive Manufacturing

- Speed has become more significant than scale on a number of fronts, including time to market, time to gather input and learn from it, and time to make and carry out decisions.
- Flexible supplier bases enable businesses to better withstand unexpected events that disrupt the supply chain



Inclusive Manufacturing

- Inclusive supply networks are a key tool the manufacturing sector may use to make a lasting and beneficial impact
- An inclusive supply chain will lead to a resilient economy



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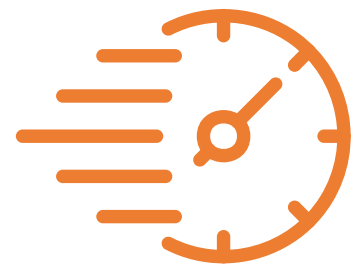
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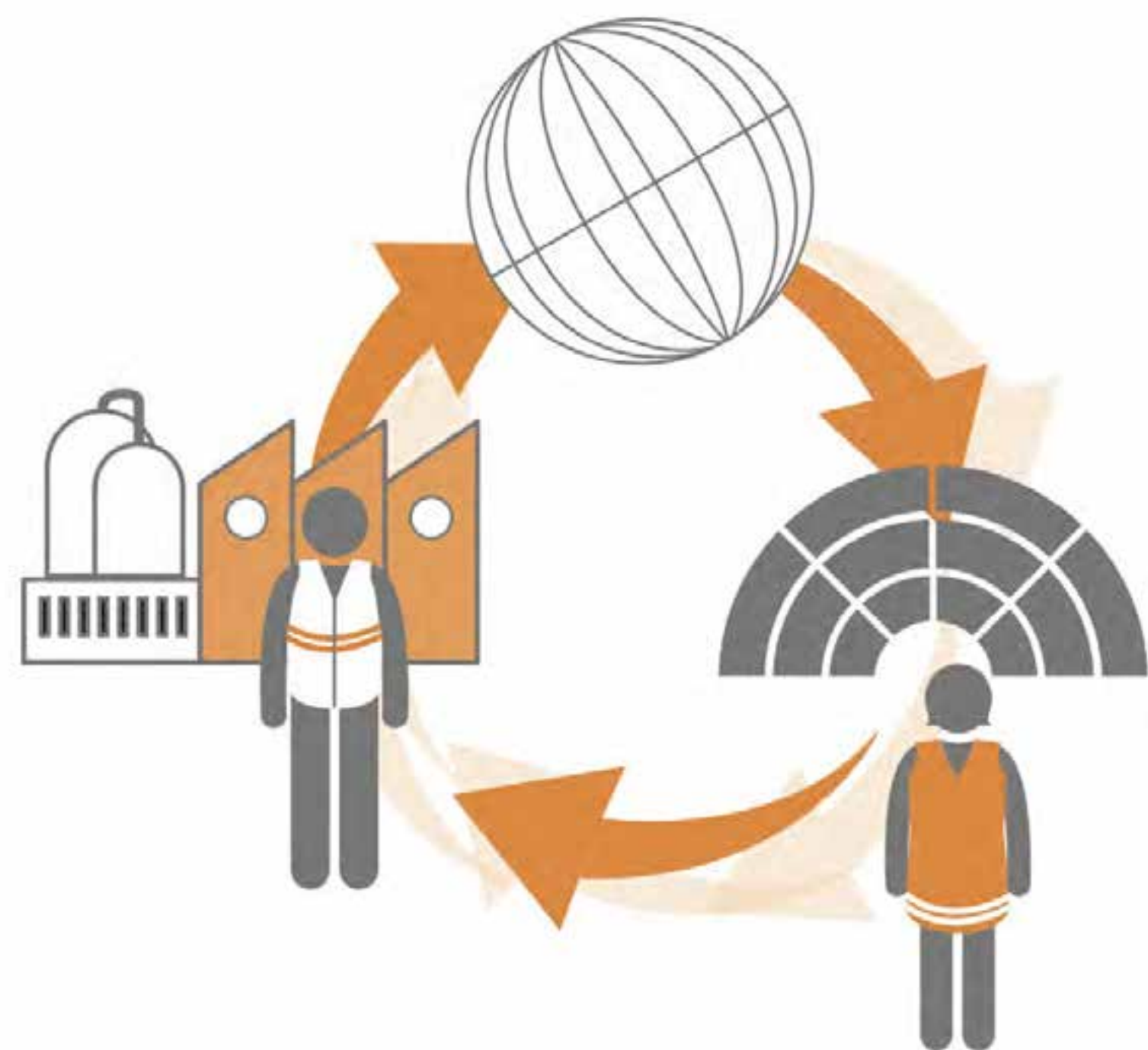
10 Key Recommendations

by the World Manufacturing Foundation



1

AVOID OVERREACTIVE POLICIES THAT BRING BACK THE PENDULUM OF GLOBALISATION



- Do not overreact
- Consider the long-term impact of decisions
- Improve communication between companies and policymakers to design a regulatory environment that supports change



2

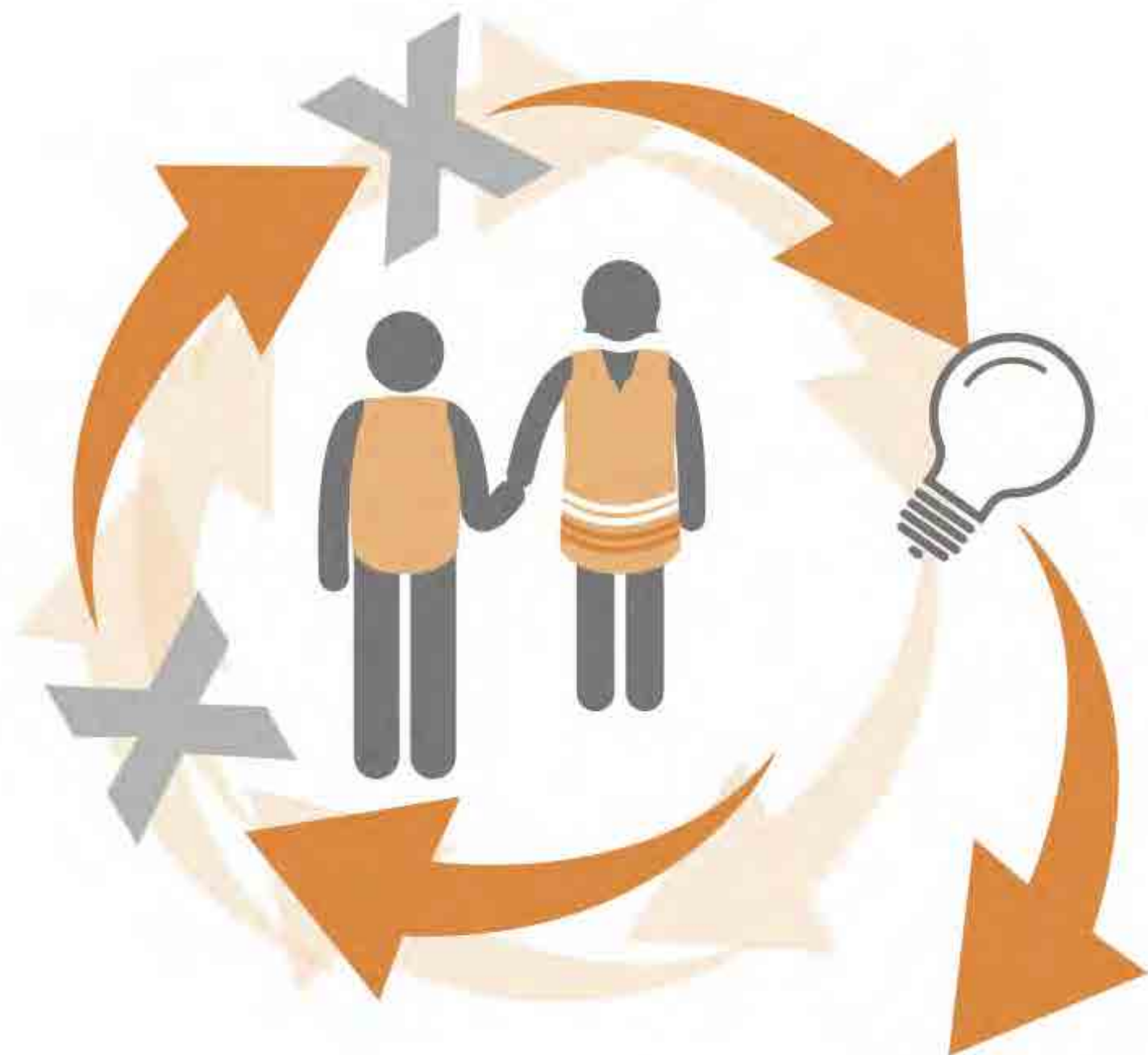
ENSURE PRUDENT, CLEVER, ENTREPRENEURIAL, AND PROACTIVE REDESIGN OF SUPPLY CHAINS TO SECURE CRITICAL SUPPLY



- Avoid counterproductive strategies by keeping continuity
- Take supply chain redesign for resilience as an opportunity to shorten the supply chain
- Exploit opportunities to combine reshoring with friendshoring



3 ADOPT AN ITERATIVE AND CONTINUOUS IMPROVEMENT APPROACH TO SUPPLY CHAINS



- Use a continuous improvement approach to adjust to frequent changes
- Build and maintain relationships based on dependability, organisational compatibility, commitment, and trust
- Incorporate supplier considerations into product design as a way to reduce costs and the impact of disruptions



4

DESIGN PRODUCTS FOR AN AGILE REDESIGN OF SUPPLY CHAINS



- Optimise product design and management for supply, production, and sustainability
- Design products and services to match the agility of supply chains
- Shift from the traditional Design for X approaches to Design for Supply Chains



5

EXPLOIT THE OPPORTUNITY OF REDESIGNING SUPPLY CHAINS TO DRIVE CIRCULARITY AND SUSTAINABILITY



- Use the opportunity given by supply chain redesign to achieve a competitive edge by proactively incorporating sustainability issues into business models
- Include more multi-tier circular supply chains
- Establish more genuine circular supply chains to proactively reduce the adverse environmental effects



6

ACCELERATE THE URGENT ADOPTION OF DIGITAL TOOLS AS ENABLERS FOR RESILIENT AND ADAPTIVE SUPPLY CHAINS



- Accelerate the adoption of digital technologies as enablers of resilient and adaptable supply chains
- Develop the skills necessary to analyse the data for utilising digital technologies
- Invest in effective data analytics to mine data for important insights for building flexible supply chains



7

SUPPORT SMALL AND MEDIUM ENTERPRISES BY INCLUDING THEM IN THE REDESIGNING OF THE SUPPLY CHAINS LEVERAGING ON THEIR CAPABILITIES AND ADDRESSING THEIR NEEDS



- Equip SMEs with digitalisation to enhance the capabilities of value chains
- Establish and maintain relationships along the value chain to strengthen support for SMEs
- Include SMEs in the redesign of the supply chains to utilise their strengths and address their needs



8

ADOPT A MULTI-DIMENSIONAL APPROACH TO CONSIDER GEOPOLITICAL RISKS AND OTHER NON-COST FACTORS IN REDESIGNING SUPPLY CHAINS

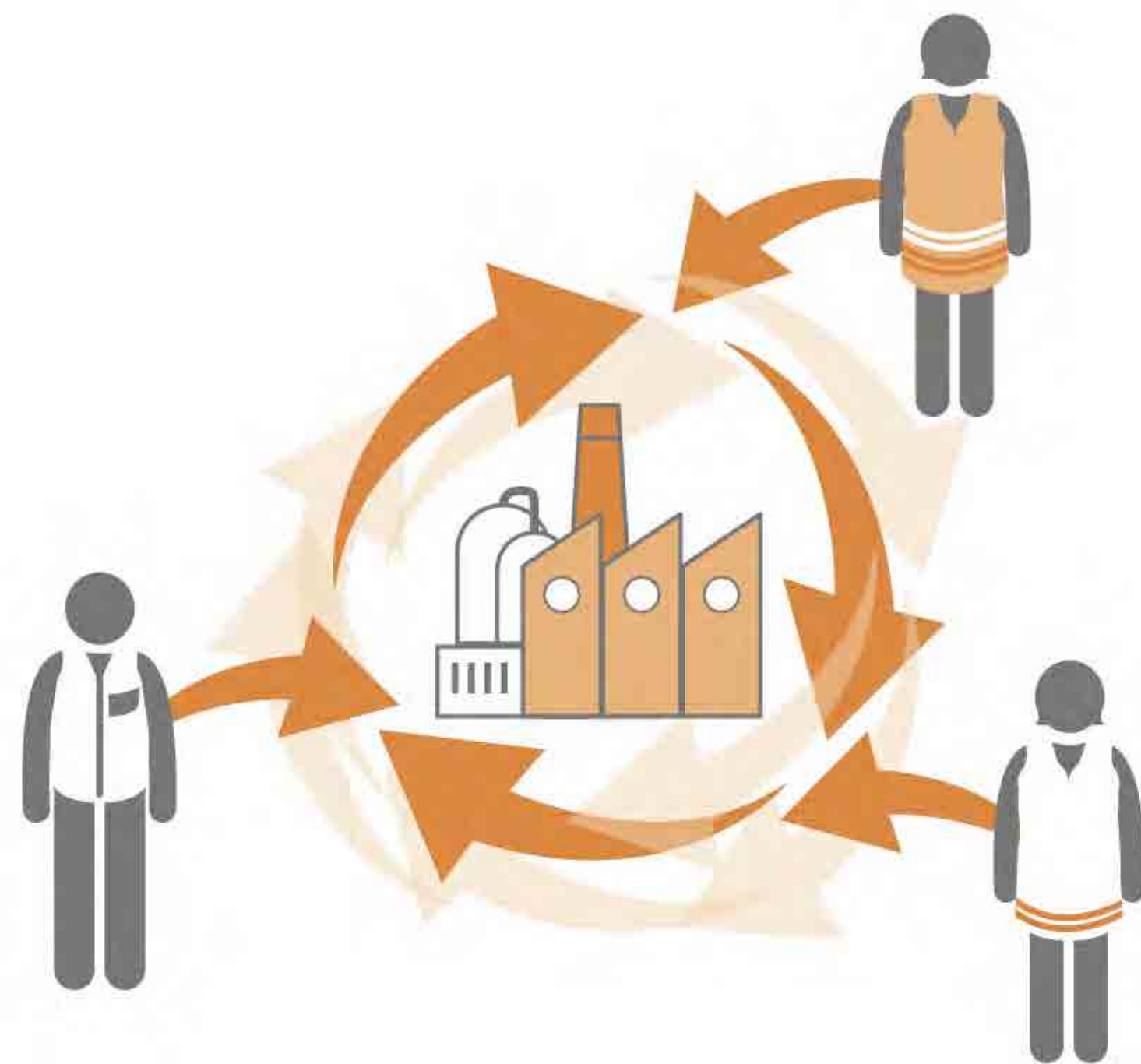


- Develop a better understanding at the collective level of how supply chains operate
- Think of long-term planning that emphasises localisation of supply and flexibility
- Modernise the cost calculus by adopting a multi-dimensional approach to consider geopolitical risks



9

RECOGNISE SKILLS AS THE NEXT MISSING FACTOR IN PRODUCTION



- Upskill the future workforce with the skills required for supply chains
- Adopt a culture that involves the entire workforce in strategic decisions for supply chain redesign
- Facilitate distinctive managerial abilities required for the redesigning and ongoing improvement of supply chains for resilience



10

TAKE ACTION THROUGH POLICIES TO EMPOWER RESPONSIBLE CONSUMER BEHAVIOURS TO REACH A STABLE ECONOMIC DEVELOPMENT



- Take new customer requirements into account while modifying business models and supplier networks
- Put in place measures through regulations that support responsible consumer behaviour
- Educate consumers about their impact on supply chains to establish responsible behaviour



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Report Highlights

50+

CONTRIBUTORS
GLOBALLY

30+

COUNTRIES
REPRESENTED

9 Case Studies from both Young Manufacturing Leaders
and the Editorial Teams Members



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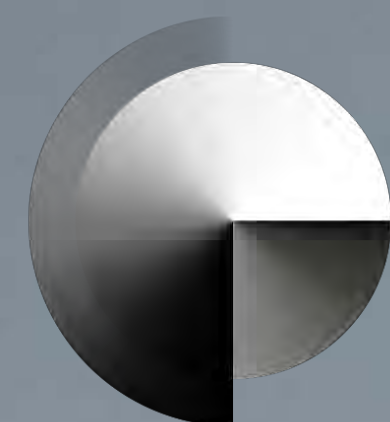
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