



# Supply Chain Disruptions in the Chemicals & Petrochemicals Industry and Way Forward

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FICCI's "Summit on Global Chemicals Petrochemicals Manufacturing Hubs in India"

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26<sup>th</sup> Nov 2021

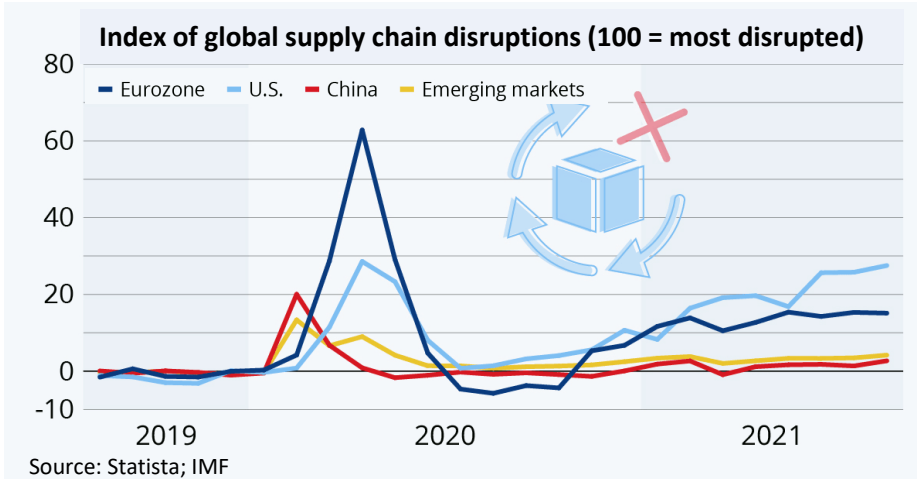
TATA CHEMICALS

CONFIDENTIAL DATA | not for circulation

# Global supply chain disruptions in recent times...

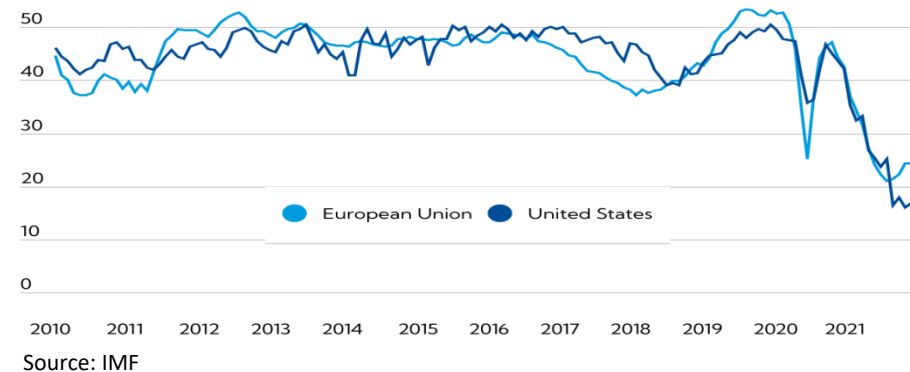
## SUPPLY CHAIN DISRUPTIONS...

- Disruptions spiked during early 2020 and are starting to increase again over the course of 2021.



- Supply chain problems are increasing for many companies, particularly in the U.S. and the Eurozone.

### Supplier's delivery times – lower index reflects longer delivery time



## ...LED TO BILLIONS OF LOSSES TO THE COMPANIES

Supply-chain-disruption losses equal 42 percent of one year's earnings before interest, taxes, depreciation, and amortization on average over a decade.

Net present value (NPV) of expected losses over 10 years, % of annual EBITDA

NPV for a major company, \$ million

NPV of expected losses, EBITDA margin, percentage point

Industry	NPV of expected losses over 10 years, % of annual EBITDA	NPV for a major company, \$ million	NPV of expected losses, EBITDA margin, percentage point
Aerospace (commercial)	66.8	1,564	7.4
Automotive	56.1	6,412	7.3
Mining	46.7	2,240	8.4
Petroleum products	45.5	6,327	8.9
Electrical equipment	41.7	556	5.4
Glass and cement	40.5	805	6.2
Machinery and equipment	39.9	1,084	6.5
Computers and electronics	39.0	2,914	5.9
Textiles and apparel	38.9	788	7.8
Medical devices	37.9	431	8.7
<b>Chemicals</b>	<b>34.9</b>	<b>1,018</b>	<b>5.7</b>
Food and beverage	30.0	1,578	7.6
Pharmaceuticals	24.0	1,436	6.0
Average	42.0		4.2

Source: Mckinsey

# Supply chains realignment in manufacturing...

## CHINA + 1 STRATEGY...



## INDIA HAS EMERGED AS AN ATTRACTIVE MFG. DESTINATION

### Most Attractive Manufacturing Destinations

Ranking among 47 countries assessed in Europe, the Americas and Asia-Pacific

Baseline Scenario Weightage

Conditions 40%

Risk 20%

Cost 40%



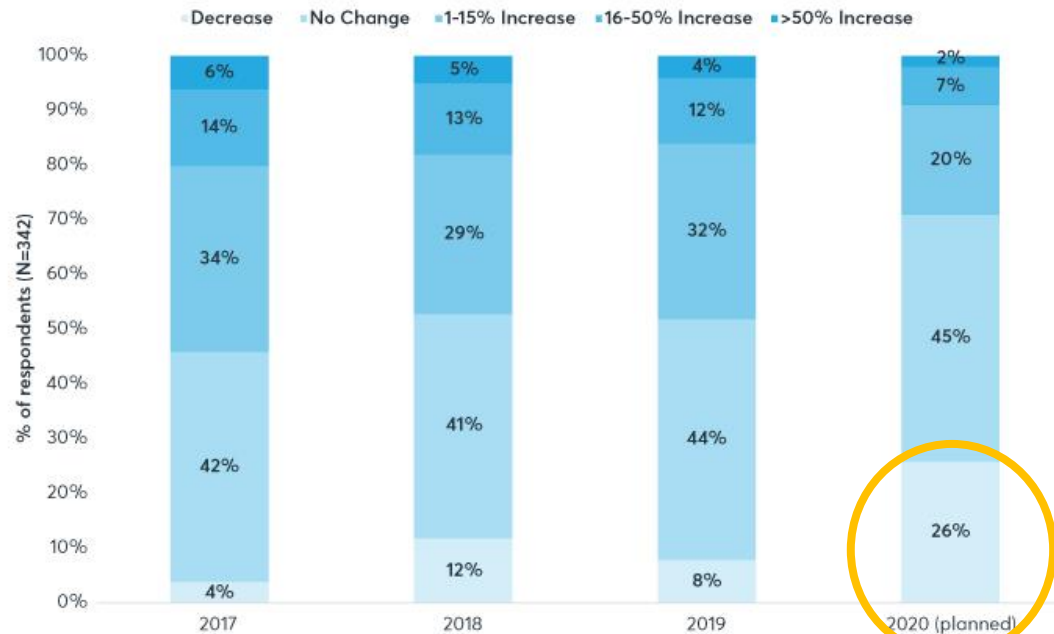
- 1 China
- 2 India
- 3 USA
- 4 Canada
- 5 Czech Republic
- 6 Indonesia
- 7 Lithuania
- 8 Thailand
- 9 Malaysia
- 10 Poland
- 11 Vietnam
- 12 Spain

Source: Cushman & Wakefield

KBK Infographics

% of Businesses looking to decrease investment in China gone up from 4% to 26%

### Investment Change, China



Source: American Chamber of Commerce

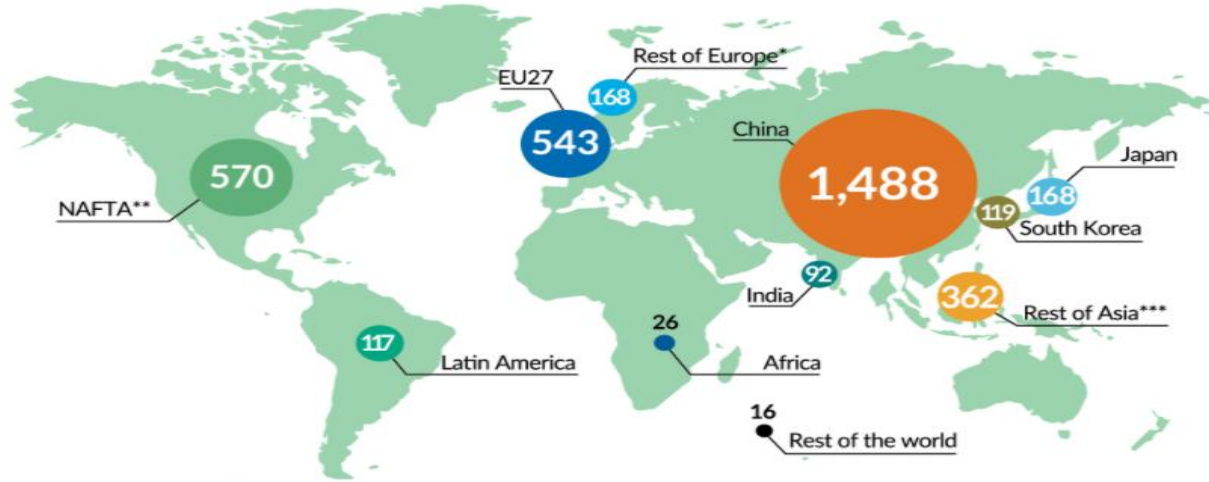
WORLD TRADE IS EXPECTED TO GO THROUGH A STRUCTURAL CHANGE

# Opening new opportunities for Indian chemical industry...

## WORLD IS HIGHLY DEPENDENT ON CHINA ACROSS CHEMICALS SPACE...

World chemical sales

Chemical sales for 2019 (€ Billion)



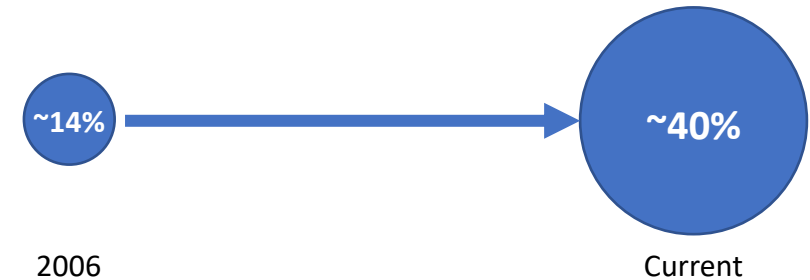
Source: Cefic Chemdata International 2020  
 \* Rest of Europe covers UK, Switzerland, Norway, Turkey, Russia and Ukraine  
 \*\* North American Free Trade Agreement  
 \*\*\* Asia excluding China, India, Japan and South Korea

Unless specified, chemical industry excludes pharmaceuticals

## INDIA IS TODAY WHERE CHINA WAS IN 2006

Parameters	China in 2006	India in 2019
GDP per capita (USD)	~2100	~2100

How China's share % of global chemicals sales changed since 2006 :



## CHINA HAS A MUCH GREATER PRESENCE ACROSS TOP CHEMICALS SEGMENTS; OPPORTUNITY FOR INDIAN CO'S TO CAPTURE HIGHER EXPORT SHARE...

% SHARE IN GLOBAL CHEMICALS EXPORTS ACROSS SEGMENTS\*

	Pharma APIs	Agrochem.	Dyes & Pigments	Plastic additives	Electronics chem.	Food/Feed additives	Nutraceuticals	Rubber chem.	Flavor & fragrances
Global Exp	\$ 77 Bn	\$ 72 Bn	\$ 66 Bn	\$ 15 Bn	\$ 15 Bn	\$ 12 Bn	\$ 10 Bn	\$ 5 Bn	\$ 5 Bn
<b>China</b>	<b>11%</b>	<b>16%</b>	<b>12%</b>	<b>8%</b>	<b>22%</b>	<b>19%</b>	<b>46%</b>	<b>27%</b>	<b>46%</b>
<b>India</b>	<b>4%</b>	<b>6%</b>	<b>5%</b>	<b>1%</b>	<b>0.02%</b>	<b>2%</b>	<b>2%</b>	<b>2%</b>	<b>12%</b>

INDIA IS WELL PLACED TO CAPITALISE ON THE EXPECTED TRADE FLOW CHANGES & TAKE ITS' SHARE

# Building Resilient Supply Chains...

## Building Resilient Supply Chain for us

Strategize and invest to absorb supply chain shocks

Build local sourcing and multiple sourcing options to derisk disruptions.

Innovative contracting mechanism that gives flexibility of sourcing options.

Increase usage of technology for better visibility and using for simulating scenarios and decision making

Study government incentives and trading blocks and reconfigure supply changes to improve competitiveness

Promote vendors for net zero goals.

## Building Resilient Supply Chain for Customer

Build regional manufacturing facilities to support local / regional demand for supply assurance.

Develop cost efficient sites with improved product flexibility

Build digital systems in supply chain for transparency & reassurance. Also, develop on line system to get changing customer needs of a nimble reaction.











Streamline entire information and documentation flow to seamlessly fit the customer organisation.

Assure contracting flexibility to customers to be able to absorb shocks and recalibrate.

Align with customers' net zero aspirations.



# Key enablers to fully tap this emerging opportunity

-  **Become self-sufficient & reduce imports in key organics & inorganic feedstock** 
  - Org. chem. like: Methanol (2.5 Mn T), Acetic Acid (1 Mn T) etc.
  - Inorg. Chem.: Soda Ash (1 Mn T), Carbon Black (0.2 Mn T) etc.
-  **Think global: create world scale capabilities** 
  - World scale plants with extremely low production cost
  - Develop in house cutting-edge technological capabilities (e.g. TCL's patented HDS, Fermentation technologies)
-  **Value-chain integration for long term cost competitiveness** 
  - Leverage basic feed stocks being exported to make their derivatives in India and reduce imports (e.g. Benzene)
-  **Build Digital & Analytics as a core capability to improve margins** 
  - Leverage basic feed stocks being exported to make their derivatives in India and reduce imports (e.g. Benzene)
-  **Weave Circular economy & sustainability into business strategy** 
  - Leverage green bio-based feed stocks
  - Decarbonize via process change, renewables & CCUS (e.g. TCE)
  - Innovation and research for recycling of chemicals & materials



## Government & Industry to work together to address sector-level challenges



### **Integrated master plan to ensure:**

- Availability of key building blocks and feedstock
- Further easing out EC and land acquisition process
- Allotment of mining blocks and land for salt works



**Infrastructure:** Fast tracking of world class logistics projects– rail / road / coastal, World scale ports etc.



### **Schemes / policy support to enable industry to move towards greener fuels**

- Development of LNG infrastructure across the country. Availability of LNG at competitive prices. Current imported LNG prices are very high
- Schemes to further promote adoption of “green/renewable” fuels



**Supply Chains:** Focused plan to build new supply chains to markets that are emerging as potential with their eagerness to have structural changes in their supply chains.



**Trade Blocks:** Identify and create new trade blocks to capitalize on emerging opportunities

**Thank you**