Europe’s competitive edge

Advanced manufacturing at the heart of the EU’s industrial transformation

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The missing ingredient in Europe's "twin" transition

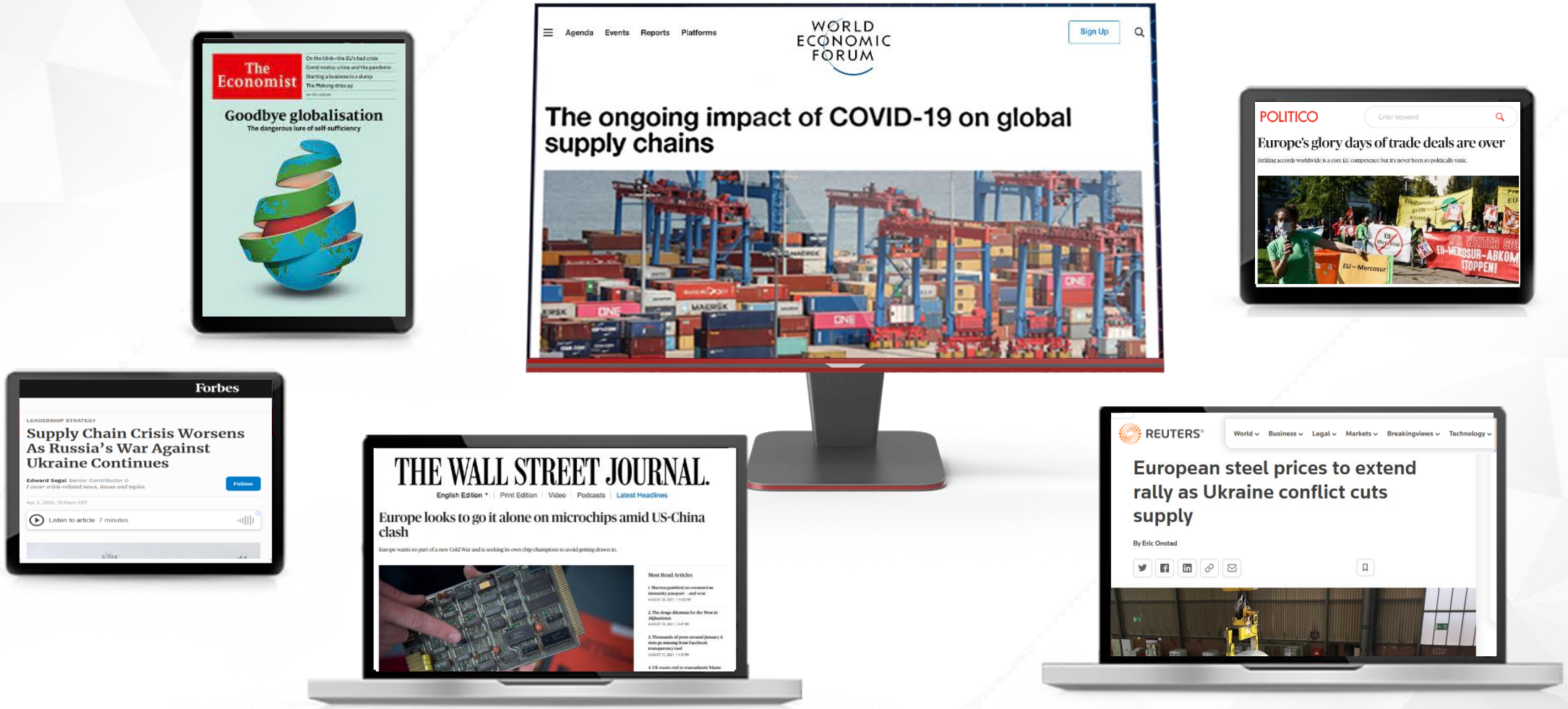
Energy crisis is the "smoking gun"

Natural-gas price

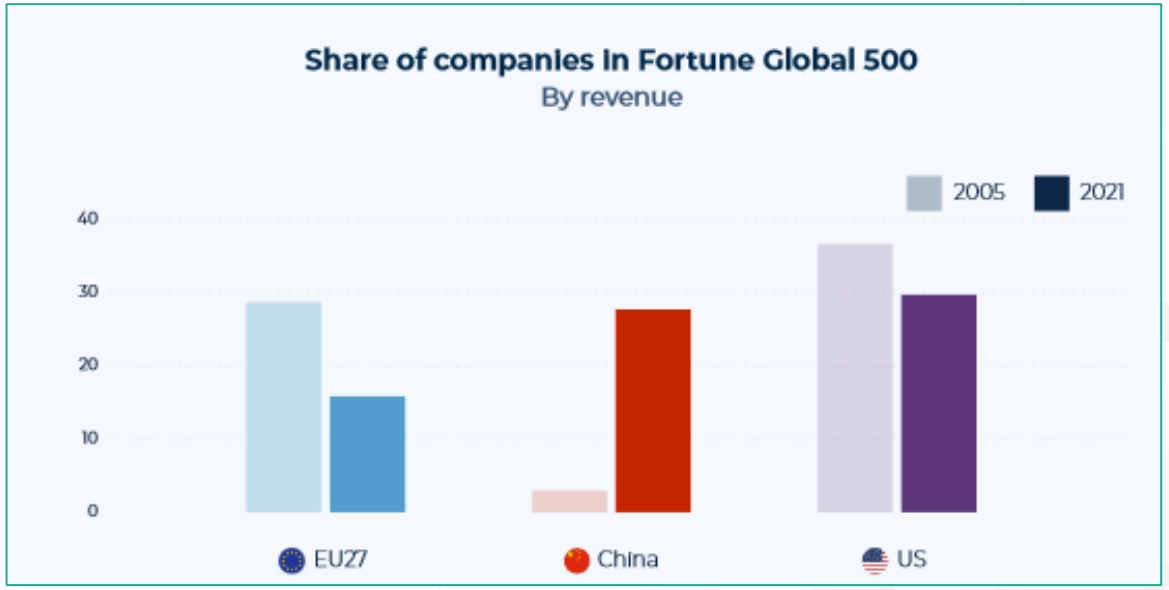
Dutch TTF front-month futures, €/MWh

Source: The Economist

Europe needs to stand its ground in a deteriorating global order

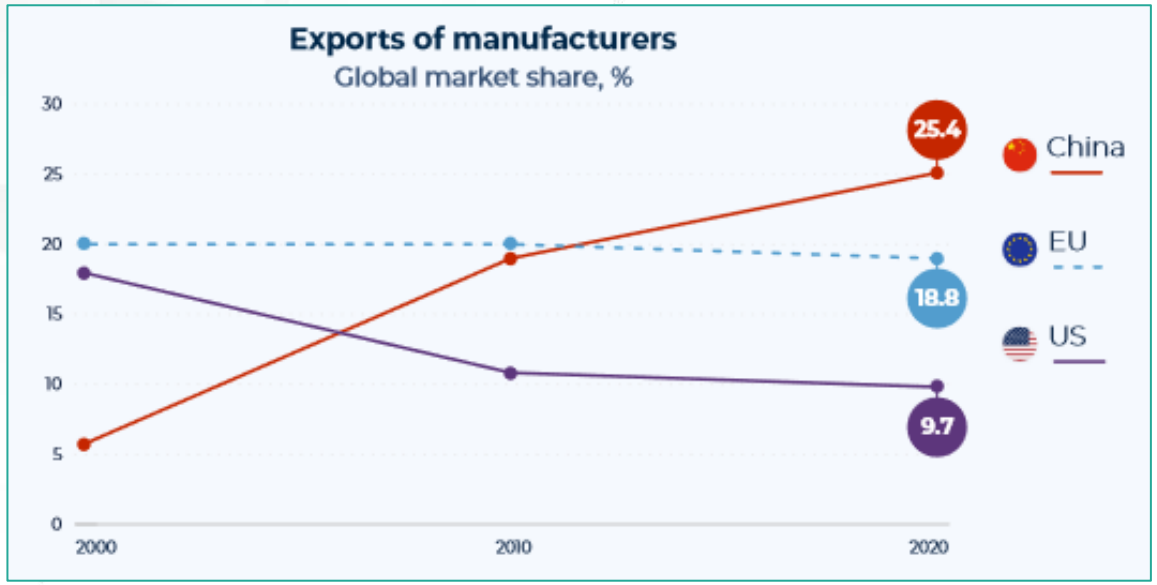


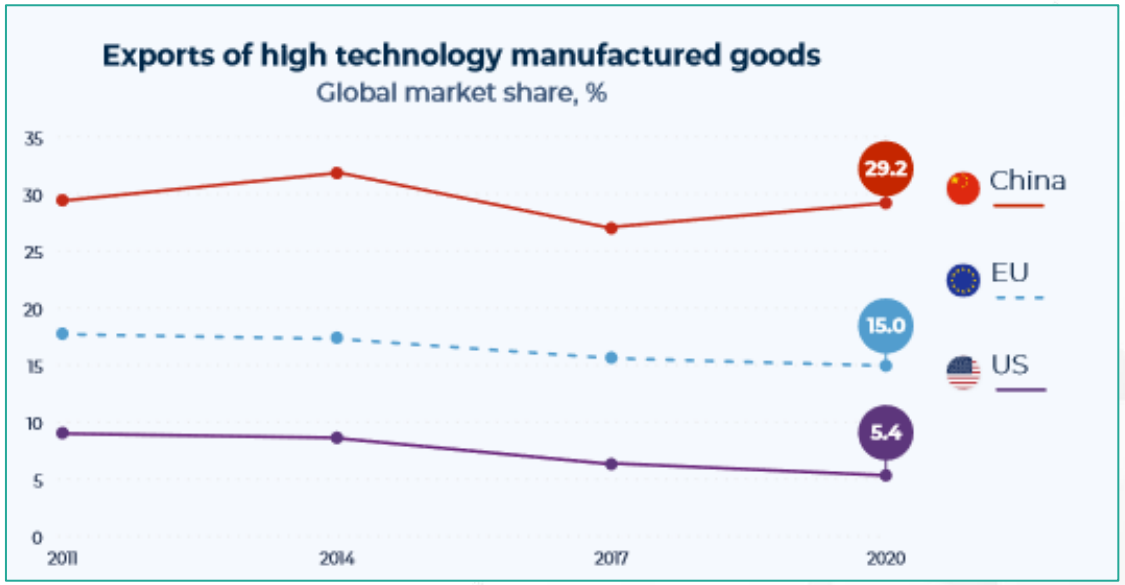
Perceived economic weakness is limiting Europe's options



Source: ERT

But in manufacturing Europe is holding its ground





Source: ERT

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Industrial technologies are at the heart of Europe's transformation

Europe’s largest industrial branch

Mechanical Engineering

Metal Technology

Electrical Engineering, Electronics, ICT

Annual turnover
2,480
billion EUR

Direct employment
10.97
million people

Annual exports
664
billion EUR

Our industries comprise of
770,000
companies
the vast majority of which are SMEs and microbusinesses

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Lithuanian industry is at the heart of the action

TECHNOLOGY IN ACTION ELINTA ROBOTICS

Cutting down on wastage through AI-enhanced quality control

Challenge

Usually, when a production process is automated, people still perform product quality control at the end of the line. This means that a faulty part can run through several processes, wasting materials, energy and time, only to get rejected at the very end when the fault is spotted.

Say it's furniture board running at around 30 parts per minute. Typically, operators will check when the full pallet comes out and, if the top parts have any visual defects, they have to stop the line, go through the whole pallet, and possibly scrap most of the parts. But if the defect is missed, it might go all the way to the final customer before it gets noticed, triggering a customer claim and potentially a whole batch of furniture that gets scrapped.

Automating the quality control process is the obvious answer but how to do it, especially when the surface of the parts being checked is complex and irregular, like wood, with all its textures, grain, knots and varying shades of colour?

Solution

Quality 4.0 is the application of advanced digital technologies to enhance traditional best practices in quality management.

Lithuanian company Elinta Robotics has developed an automated visual quality control system called SmartPeek™ that operates in customers' production lines, right after the manufacturing process where the defects can happen, explains CEO Aurelijus Beleckis. The NOK, or 'not okay', parts are rejected immediately, which saves a lot of materials, energy, workforce and money, he says.

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>
> **Aurelijus Beleckis**, CEO, Elinta Robotics

Technology at Heart - Spotlight on Lithuania 5

TECHNOLOGY IN ACTION TELTONIKA

Succeeding at electronics manufacturing in Europe

Challenge

As the green and digital economy takes off in Europe, demand is surging for electronics for renewable energy, for decarbonising industry, for the automotive sector, for medical devices, and many other applications. Electric cars, for example, have five times more electronics than conventional internal combustion engine cars. Renewable energy requires electronics for power management, inverters and more. The development of 5G connectivity technologies is also increasing the demand for electronic manufacturing services (EMS).

Where is all this electronic tech coming from? Lately, not so much from Europe: while Europe used to have a bigger market share of producing electronics and printed circuit boards (PCBs), today it represents less around 3% of a market that is dominated by China*. How can European electronics manufacturing companies compete and thrive to meet the growing demand?

Solution

"We have a term in the organisation – problemability. It is both a problem and an opportunity at the same time," says Simas Rutkauskas, CEO of Teltonika EMS in Lithuania.

For EMS companies in Europe to compete, the main challenge, apart from the supply of raw materials, is speed and flexibility. Time-to-market is a critical indicator for customers, so to compete globally it is important for most European EMS manufacturers to be fast.

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> **Simas Rutkauskas**, CEO, Teltonika EMS

*Global Printed Circuit Boards Market to Be Worth $84.5 Billion by 2024

Technology at Heart - Spotlight on Lithuania 7

TECHNOLOGY IN ACTION VMG

Driving EU industry competitiveness and creating jobs

Challenge

How to increase EU industry competitiveness and drive innovation in the post-Covid age?

The potential of industrial automation and digitalisation to increase competitiveness and efficiency is well known and often talked about. Doing it is harder. Resistance can be due to the upfront investment costs, an under-appreciation of the benefits, and concerns about redundancies.

Solution

Once embarked upon, however, the benefits often exceed expectations and concerns melt away. This is certainly the experience of Lithuanian company, VMG Technics, which provides automation and robotisation products and services for manufacturing companies, especially in the wood processing industry.

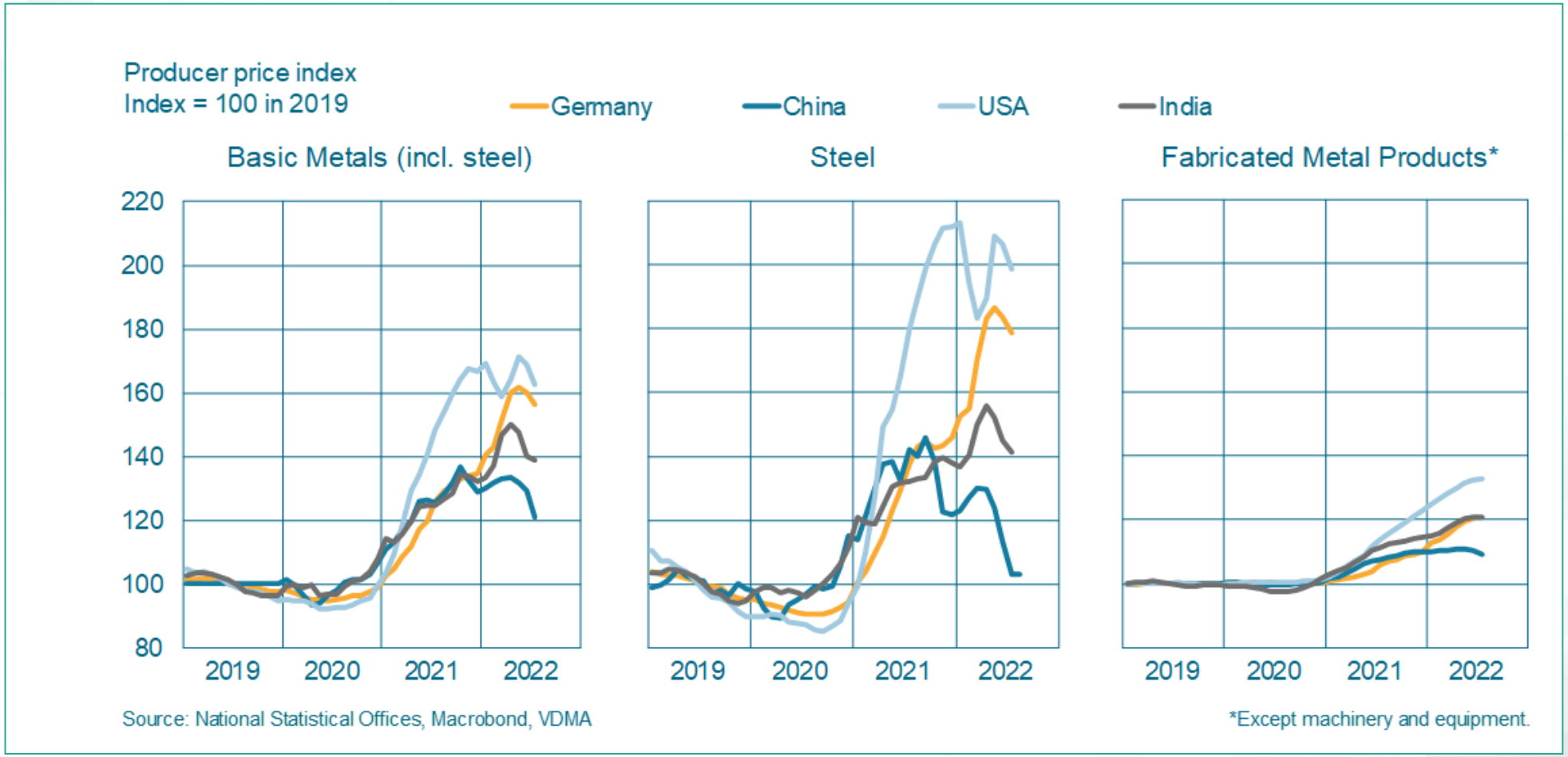
> "Now our main practice is to help out in solving the issue of staff shortages.
>
> **Mantas Leknius**, Director, VMG Technics

The company reports it has developed 160 AI and robotics-assisted innovations in two years, allowing companies to save hundreds, even thousands, of working hours per month. At the same time, it has been awarded for creating jobs, and is nearing completion on a massive new R&D park, focused on developing industrial automation and robotics solutions.

Technology at Heart - Spotlight on Lithuania 9

Supply chains are central to our competitiveness

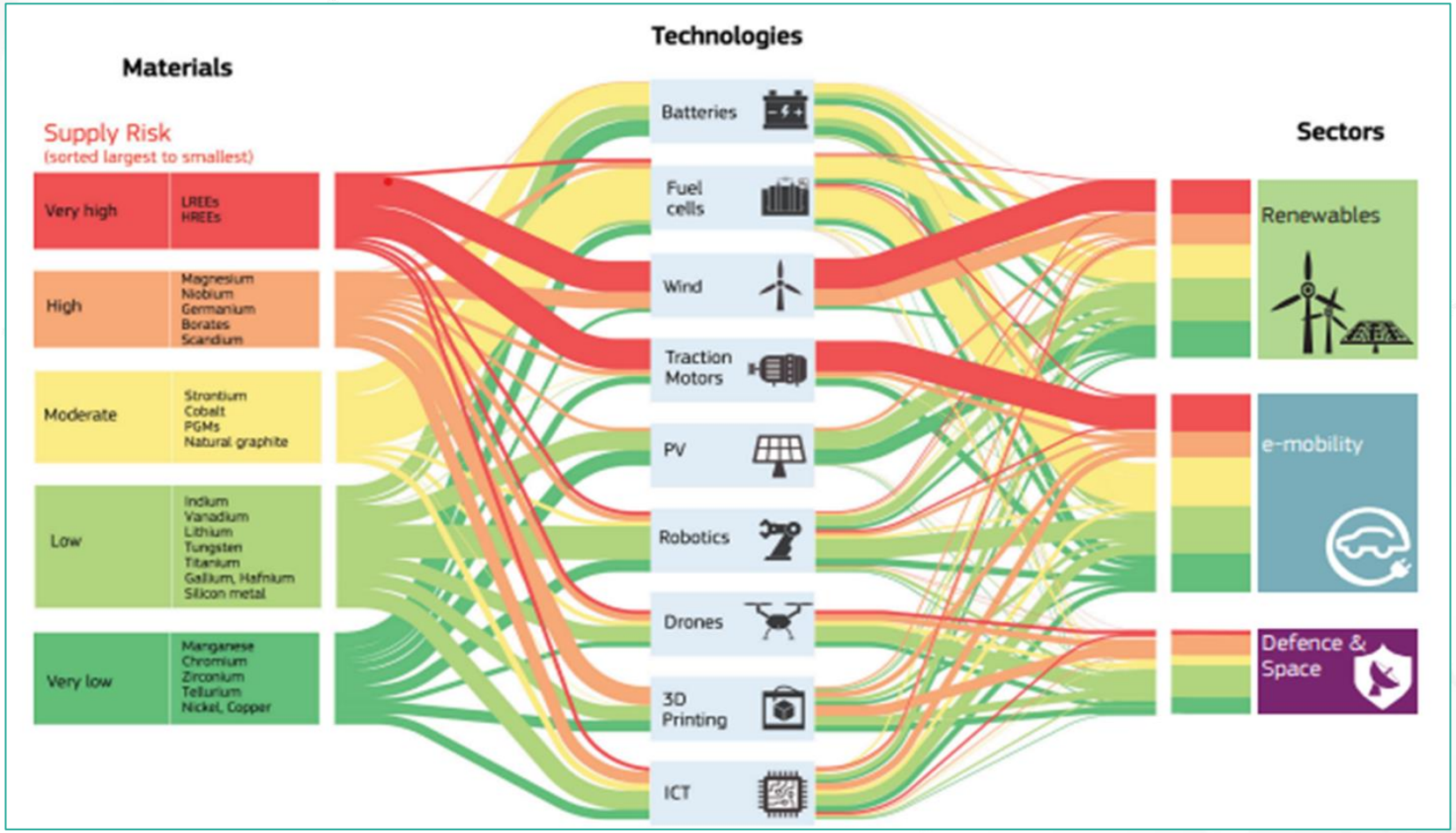
Metal Price Development in Major Countries



Source: National Statistical Offices, Macrobond, VDMA

EU digital/climate goals at risk due to supply chain dependencies?

Importance of critical raw materials for the green and digital transition



Source: European Commission

EU industrial strategy: Advanced Manufacturing is the missing link

- KPIs and tracking of progress
- Development of "transition pathways" (green & digital)
- Analysis of strategic dependencies
- Identification of investment needs
- Uptake of advanced manufacturing

Policy Blueprint for Strategic Autonomy in manufacturing

1

Supply chain resilience

Preserve companies' resilience in managing their supply chains

1. Advance raw materials strategy in Europe (including Free Trade Agreements!)
2. New supply chain Due Diligence requirements must be workable
3. Apply new "supply chain crisis" instruments with utmost caution (e.g. Chips)

2

Investments

Create required conditions for investment

1. Bring down cost of energy (esp. electricity!)
2. Include advanced manufacturing technologies in EU Sustainable Finance Taxonomy
3. Make effective use of EU funds (Horizon Europe, Digital Europe, IPCEIs…)

3

Competitiveness

Ensure Europe's Internal Market is fit for purpose

1. Preserve Europe's leadership in standardisation
2. Ensure new Data rules are flexible and protect companies IPR
3. Keep new safety and liability requirements for AI and machinery "light touch"

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Thank you

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