

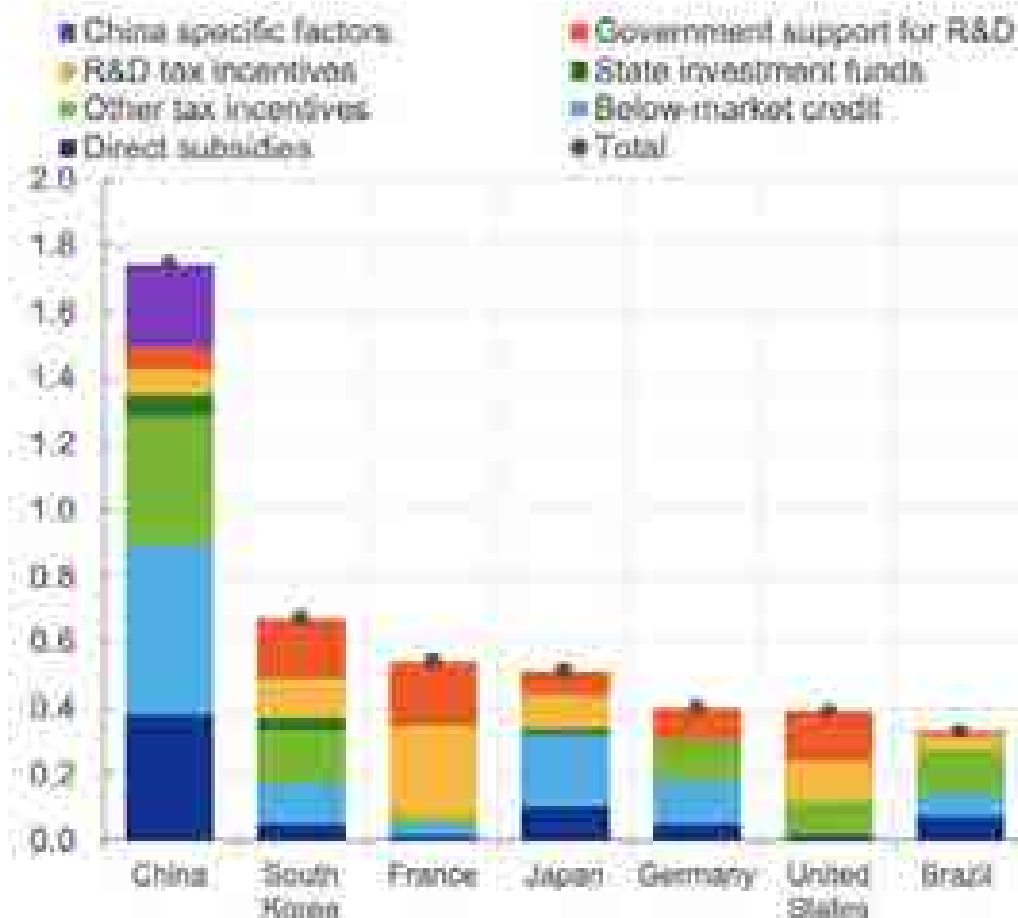
# Manufactured Goods Surpluses

UN Comtrade Data with SITC Categories, % Global GDP



## Industrial policy share in GDP

(percentage share and percentage point contributions)

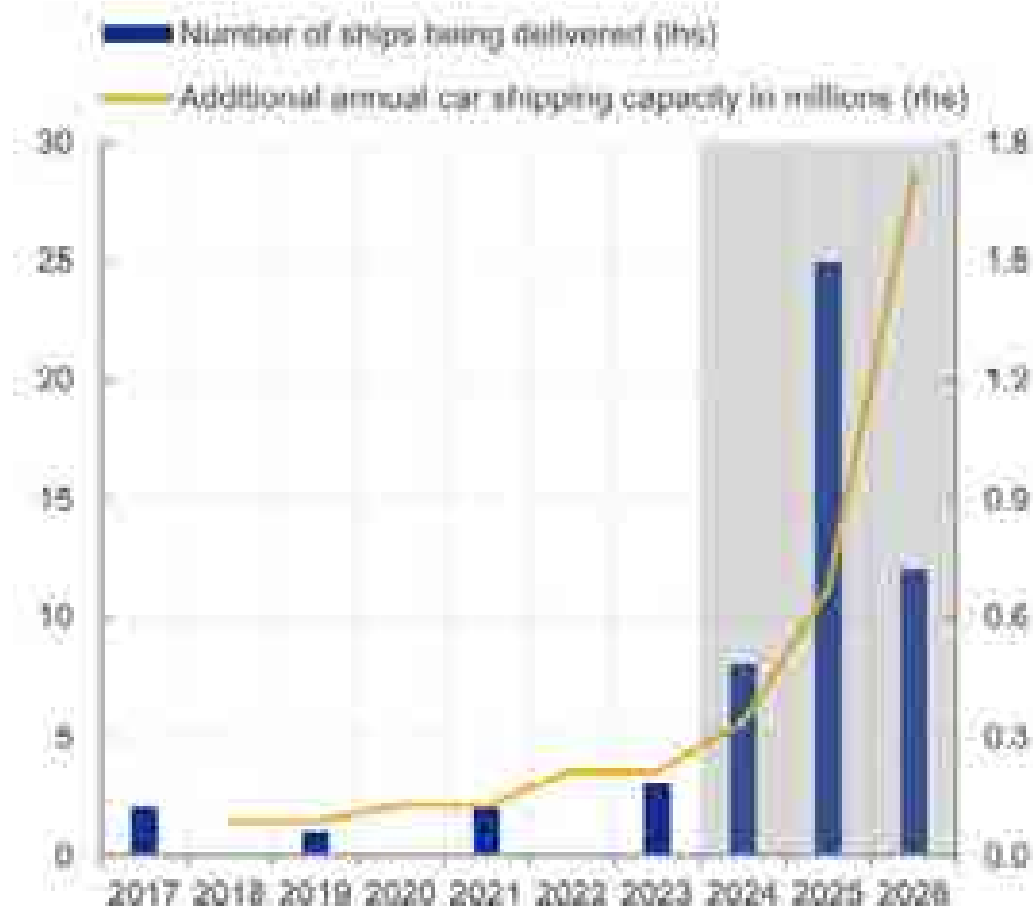


Source: Center for Strategic and International Studies.

Notes: The estimates refer to 2019.

## China's car shipping capacity plans

(lhs: number of ships, rhs: millions of cars)

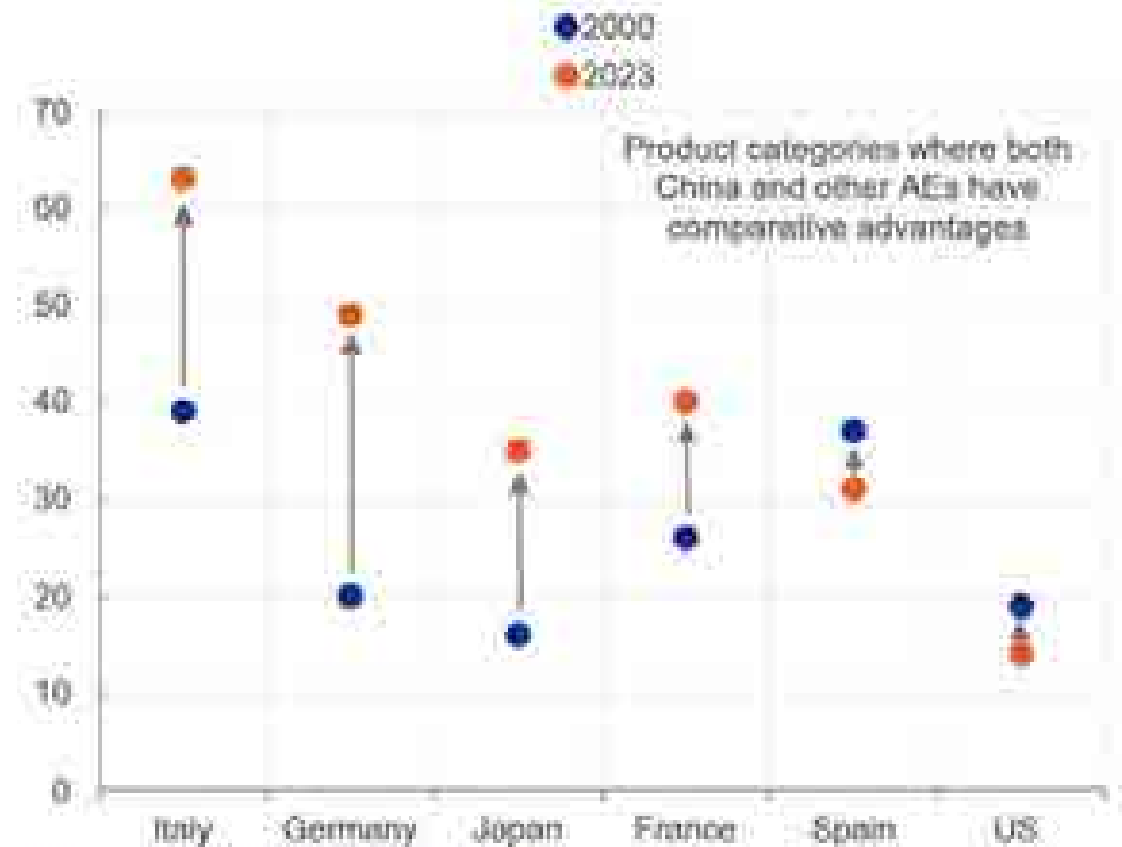


Sources: Rhodium and ECB staff calculations.

Notes: Based on the assumption that each ship can carry 7000 electric vehicles and that it can make 6 trips per year. Shaded area refers to car-carrying ships not yet delivered. It is assumed that ships can be used for shipping of cars a year after being delivered.

**China has  
«invaded» tens  
of European  
product  
categories**

### Number of product categories in which both China and other countries specialise



Source: UNCTAD and ECB staff calculations.

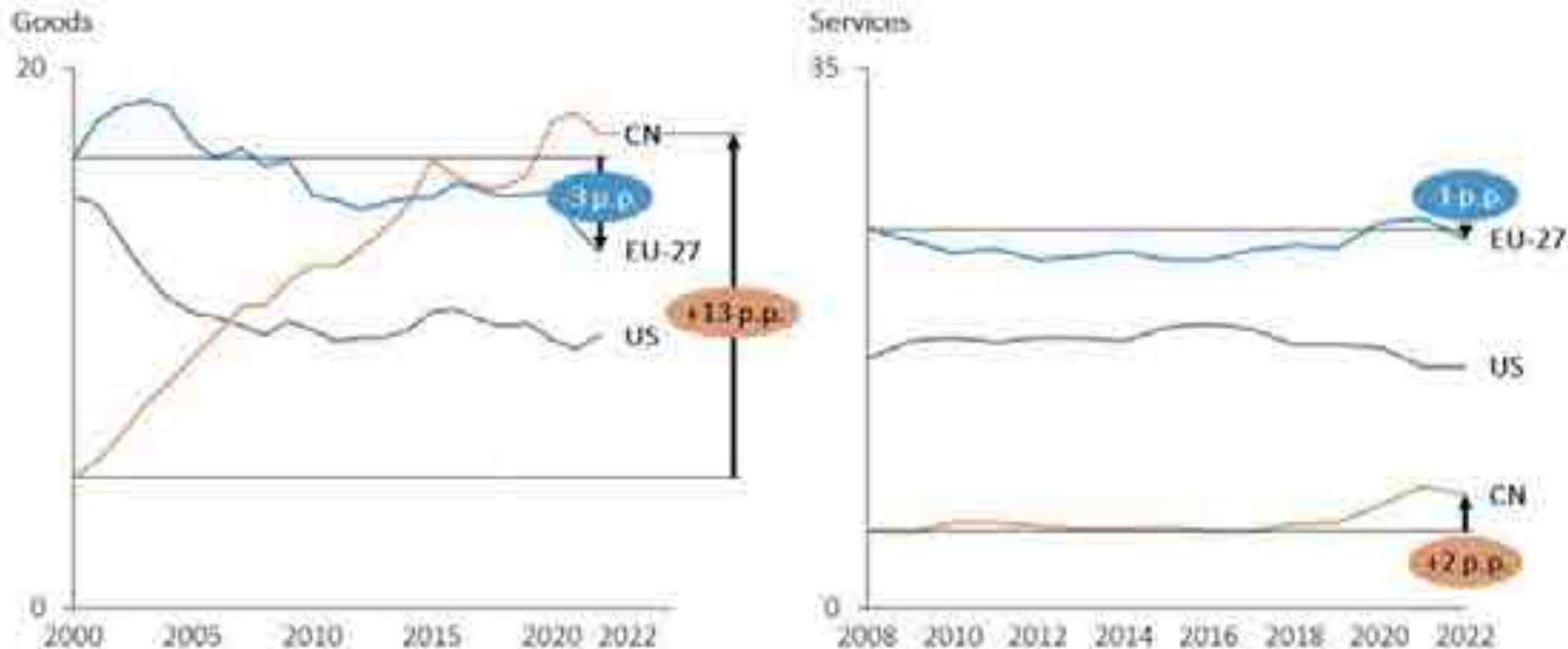
Notes: The chart shows comparative advantage, referring to the revealed comparative advantage indicator, measuring the ratio between the share of country's exports in a particular product category in its total exports, and the same share for the world as a whole. A country has comparative advantage if the value of this ratio is above 1. For instance, if Italy and China both specialise in the same specific product category, they are likely to directly compete for exports.

Latest observation: 2023.

# China: an export giant in goods, a dwarf in services

## Share in world trade in goods and services

% of global trade, excluding intra-EU trade

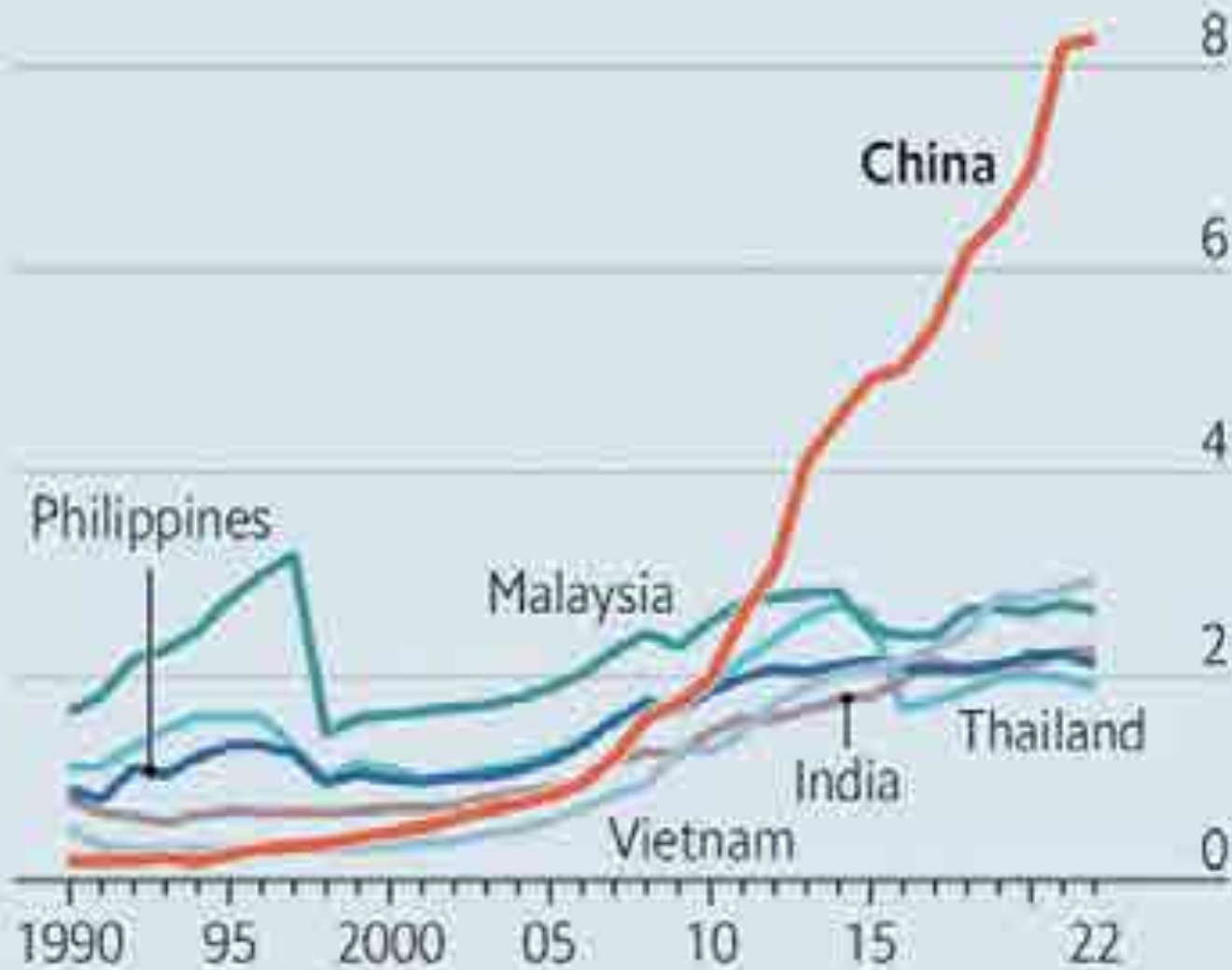


Note: The data refers to goods trade (lhs) and services trade (rhs), excluding intra-EU. The global total is the net of intra-EU trade.

Source: European Commission (JRC). Based on WTO.

## Pay as you grow

Manufacturing unit labour cost, \$ per hour

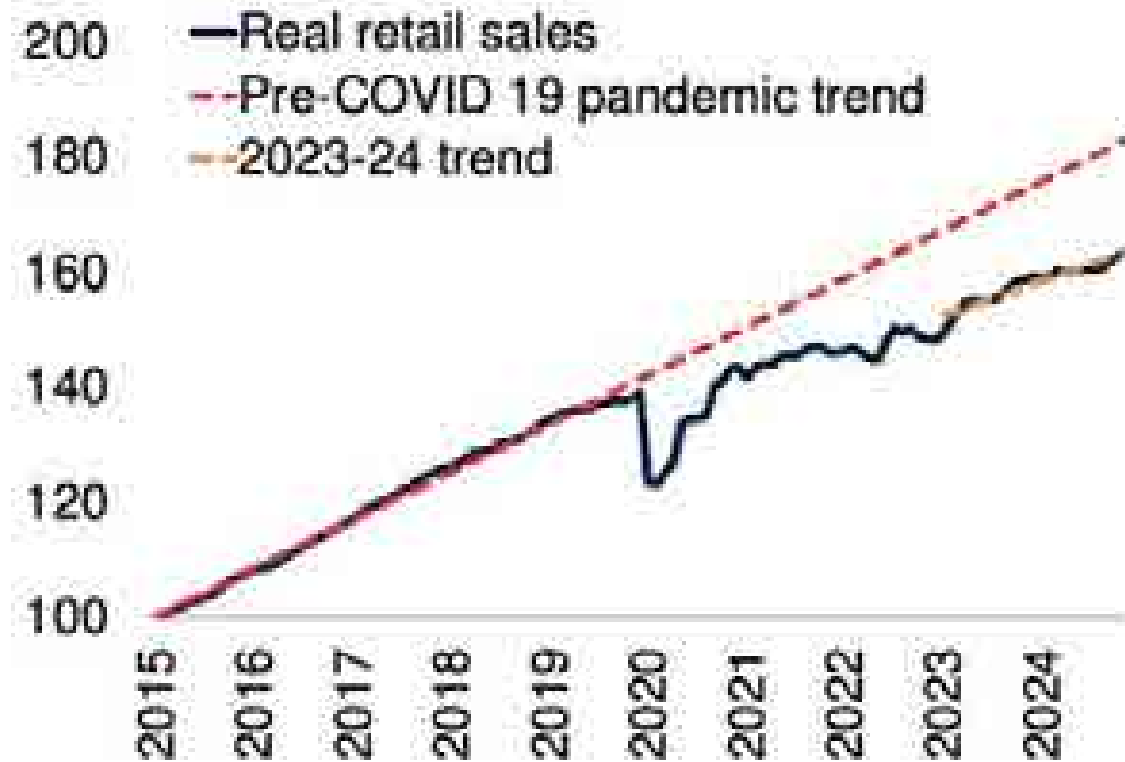


Source: Haver Analytics

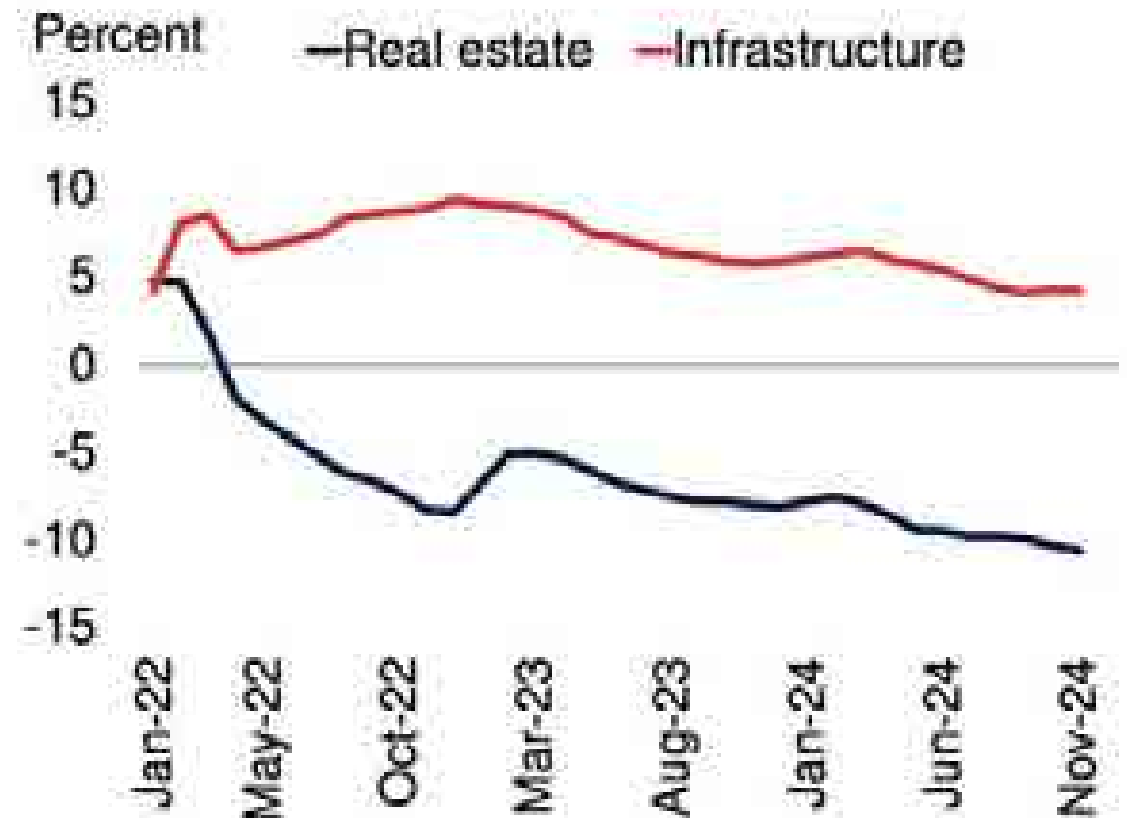
**Manufacturing labour cost in China are now 3x-4x higher than India, Vietnam, Philippines, Thailand, Malaysia**

## D. Real retail sales in China

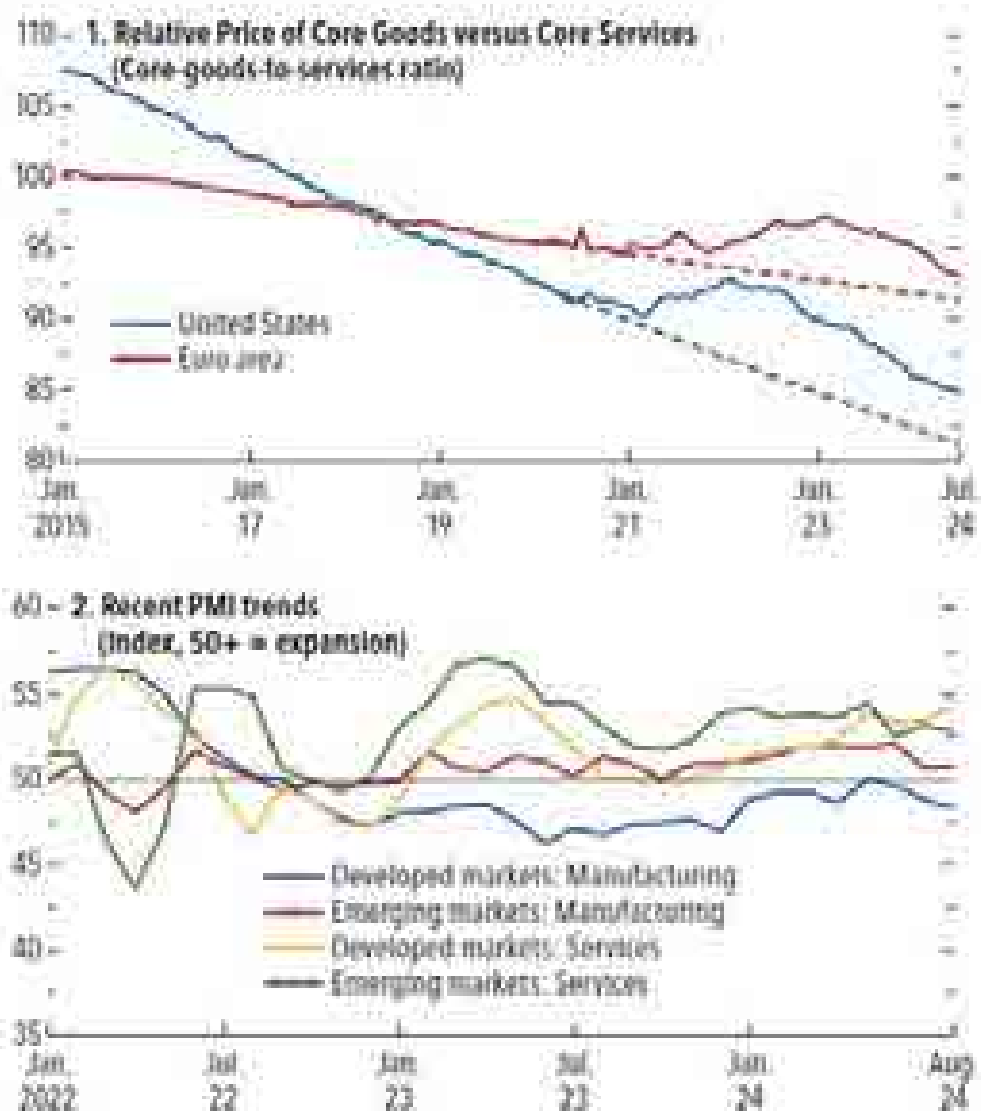
Index, January 2015 = 100



## E. Fixed-asset investment growth in China



**Figure 1.10. Continued Rotation to Services**



Sources: Haver Analytics; and IMF staff calculations.

Note: Solid lines denote GDP growth from the October 2024 World Economic Outlook, and dashed lines denote GDP growth forecasts from the April 2024 World Economic Outlook, respectively. PMI = purchasing managers' index.

# The global shift to services

*(while the West slides away from manufacturing of goods...)*

Behind stable growth figures, a global shift from goods to services consumption is underway. This rebalancing is tending to boost activity in the services sector in advanced and emerging markets but is dampening manufacturing. Manufacturing production is also increasingly shifting toward emerging market economies — in particular, China and India—as advanced economies lose competitiveness (Figure 1.10, panel 2).



# Whatever Europe Takes

:

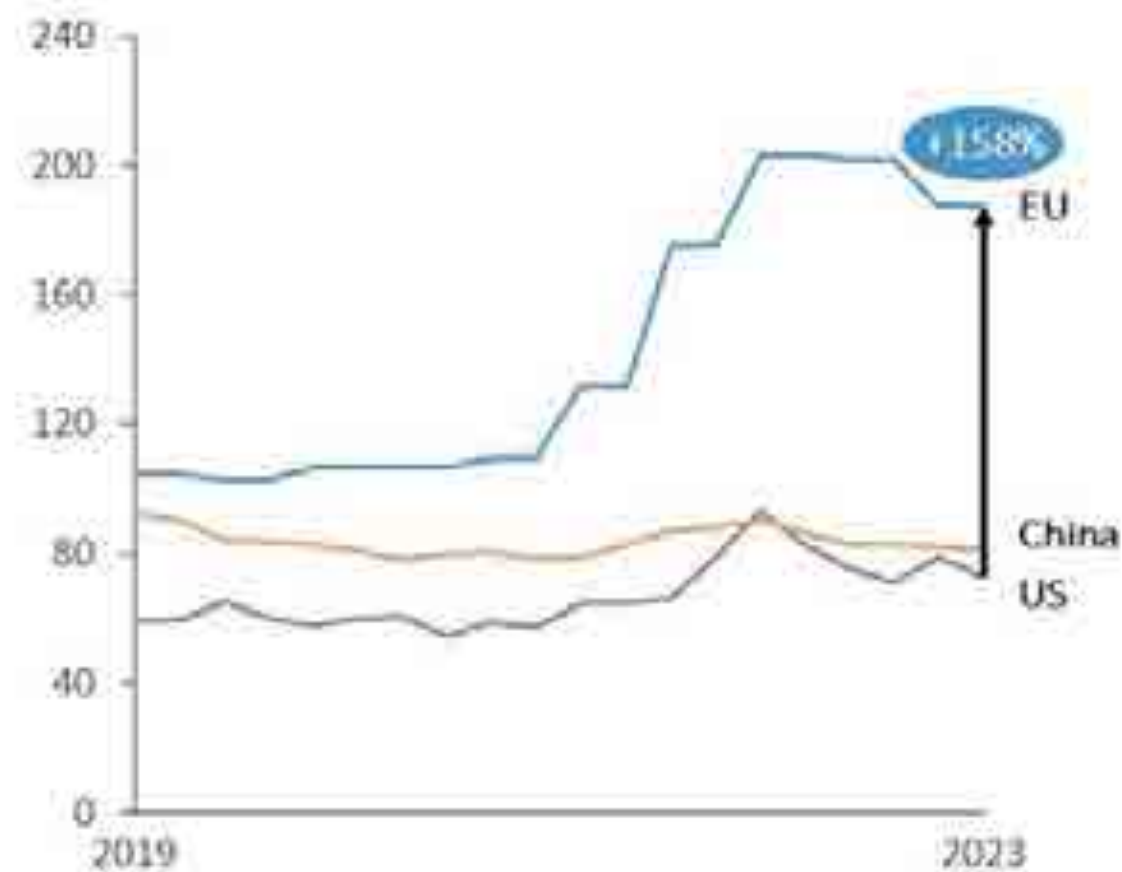
- Energy
- Innovation
- Defense & Security



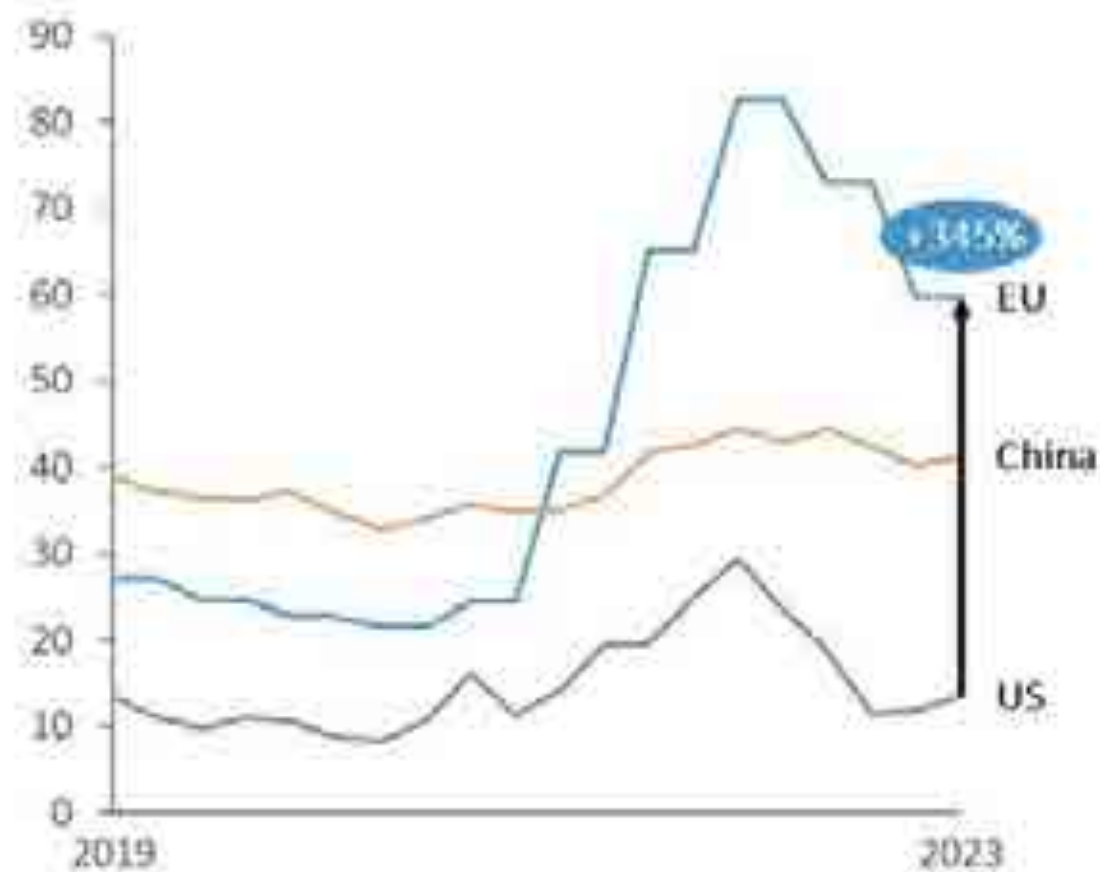


## Gas and retail price gap for industry

Industrial retail power prices  
EUR/MWh



Industrial gas prices  
EUR/MWh



Source: European Commission, 2024. Based on Eurostat (EU), EIA (US) and CEIC (China), 2024.

# Electricity wholesale and retail prices across Member States for Industry

EUR/MWh, 2023

## Wholesale electricity prices



## Retail electricity prices

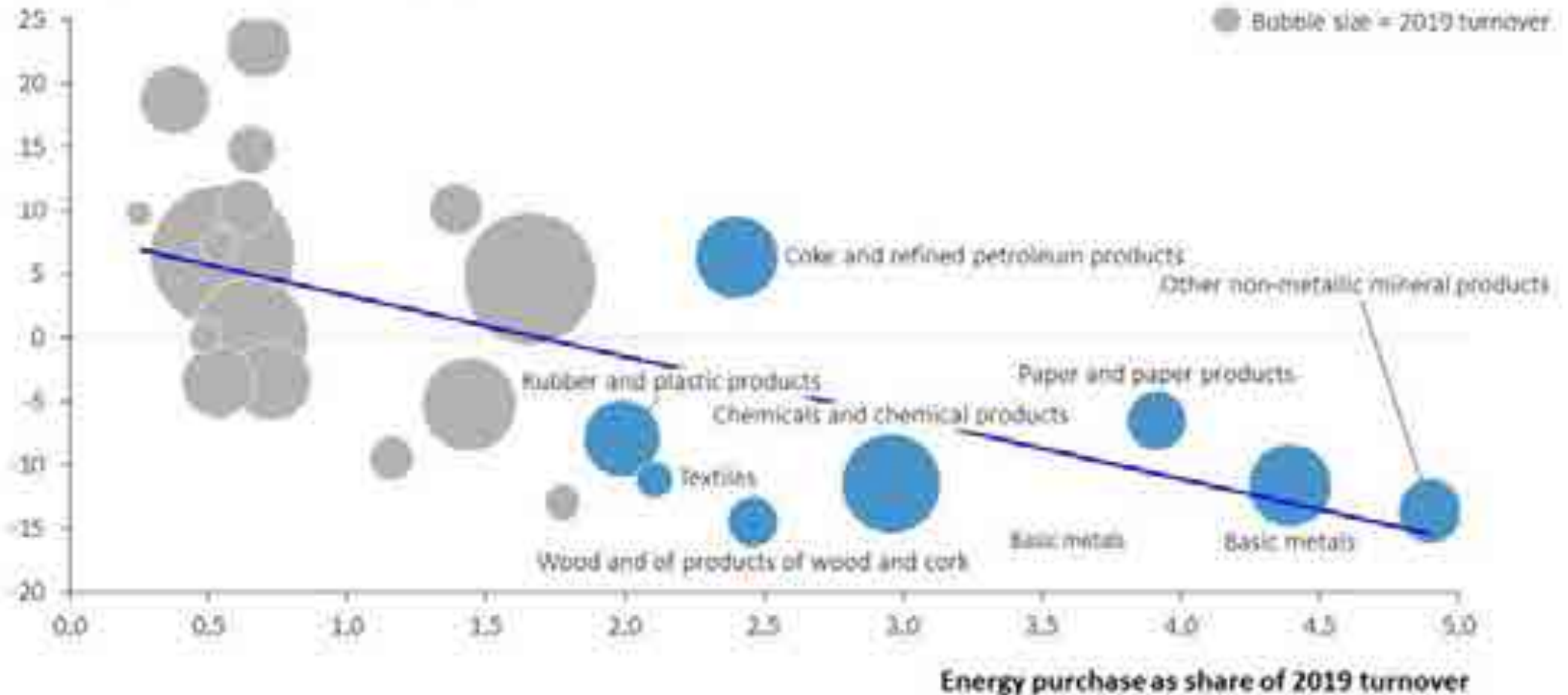


Source: European Commission, 2024. Based on Eurostat, S&P Global, and ENTSO-E, 2024.

# Energy costs explain the crisis in energy-intensive manufacturing sectors

## Energy-intensive manufacturing challenges

% change in industrial production (Apr. 21 vs Apr. 21)

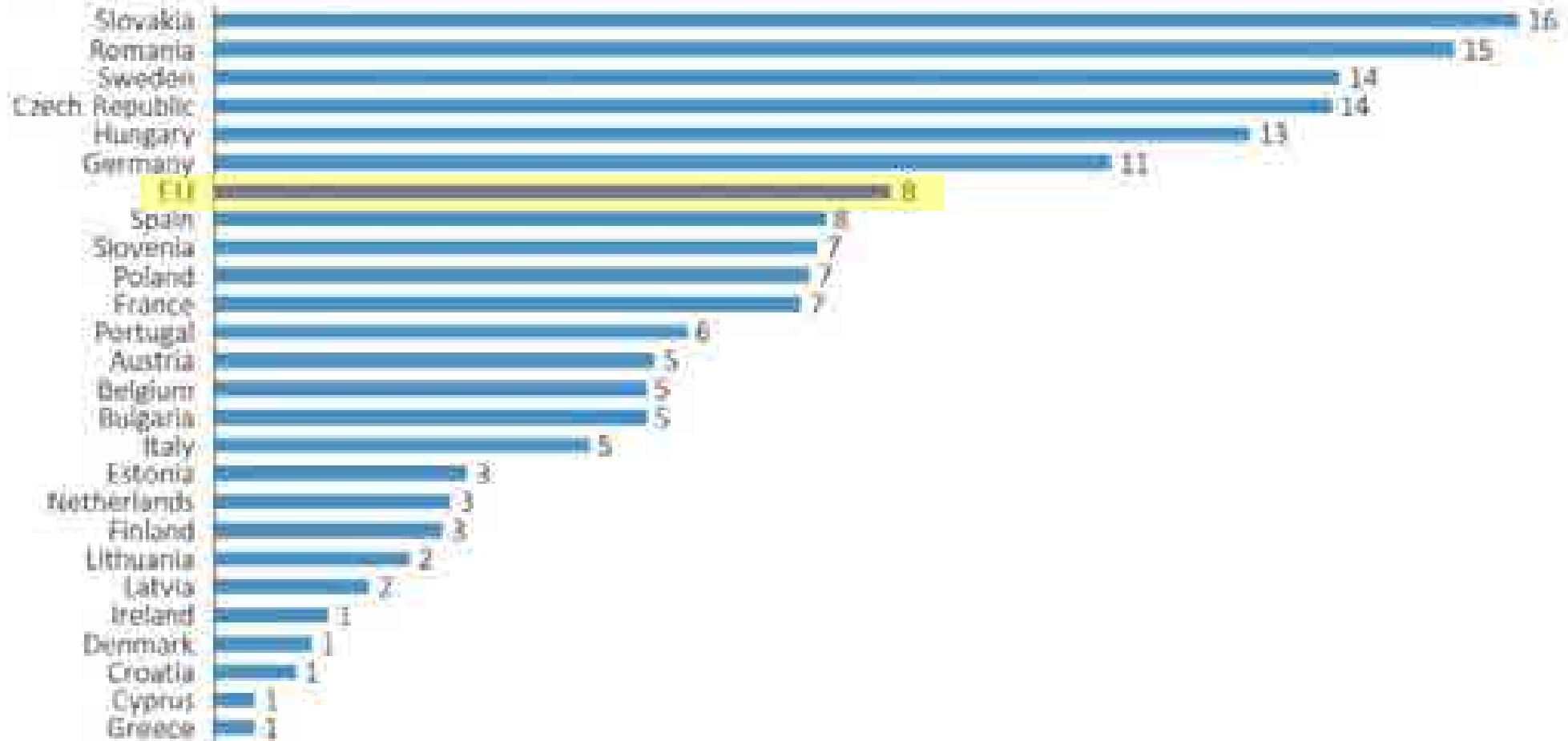


Source: Eurostat, OECD Trade value added (TIVA database) and ECB staff calculations.

# Car-centric economies

## The relevance of the automotive industry by Member State

Share of total manufacturing, by country, %, 2021

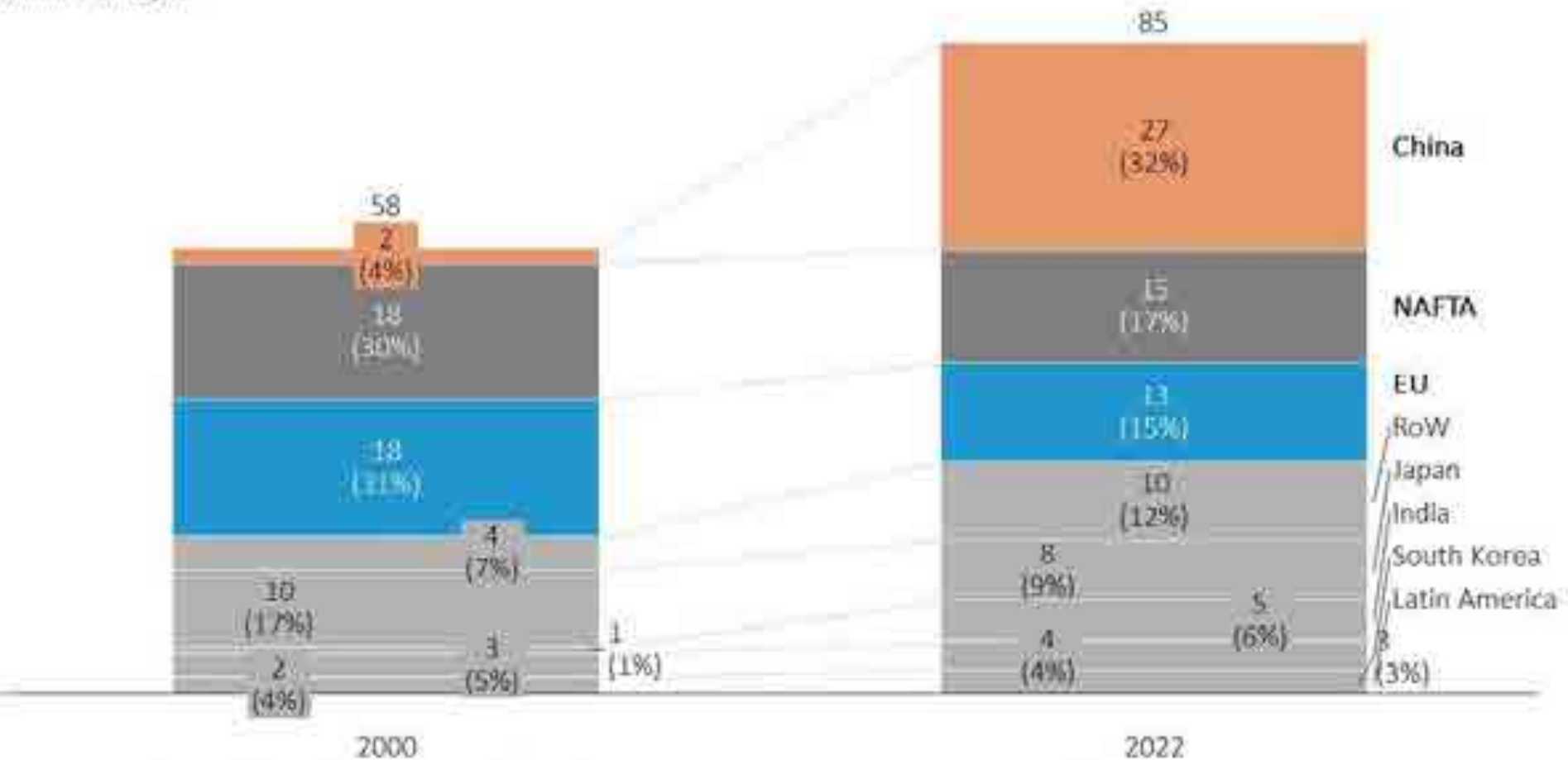


Source: European Commission, 2024. Based on Eurostat, 2024.

# EU car manufacturers have lost half of global market share. China has gained 8x, twice as EU

The shift in vehicle production

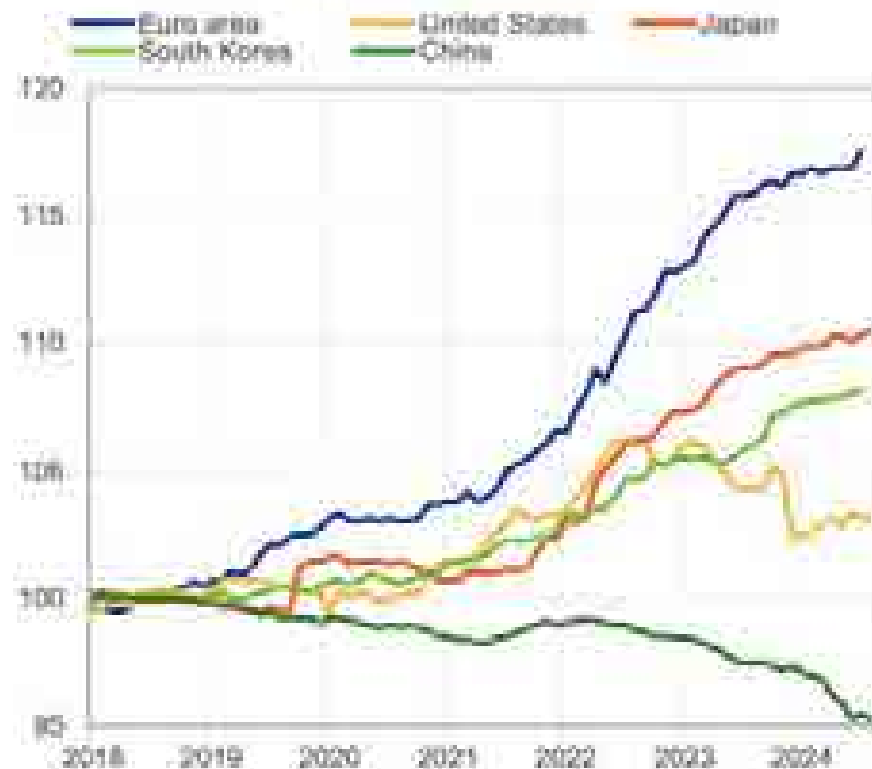
Million units, %



Source: European Commission, 2024. Based on International Organization of Motor Vehicle Manufacturers, 2023

# EU car exports: -20% volumes, +20% prices (China: -5% prices, 10x volumes)

**Producer price index:  
production of motor vehicles**  
(Index: 2018 = 100)



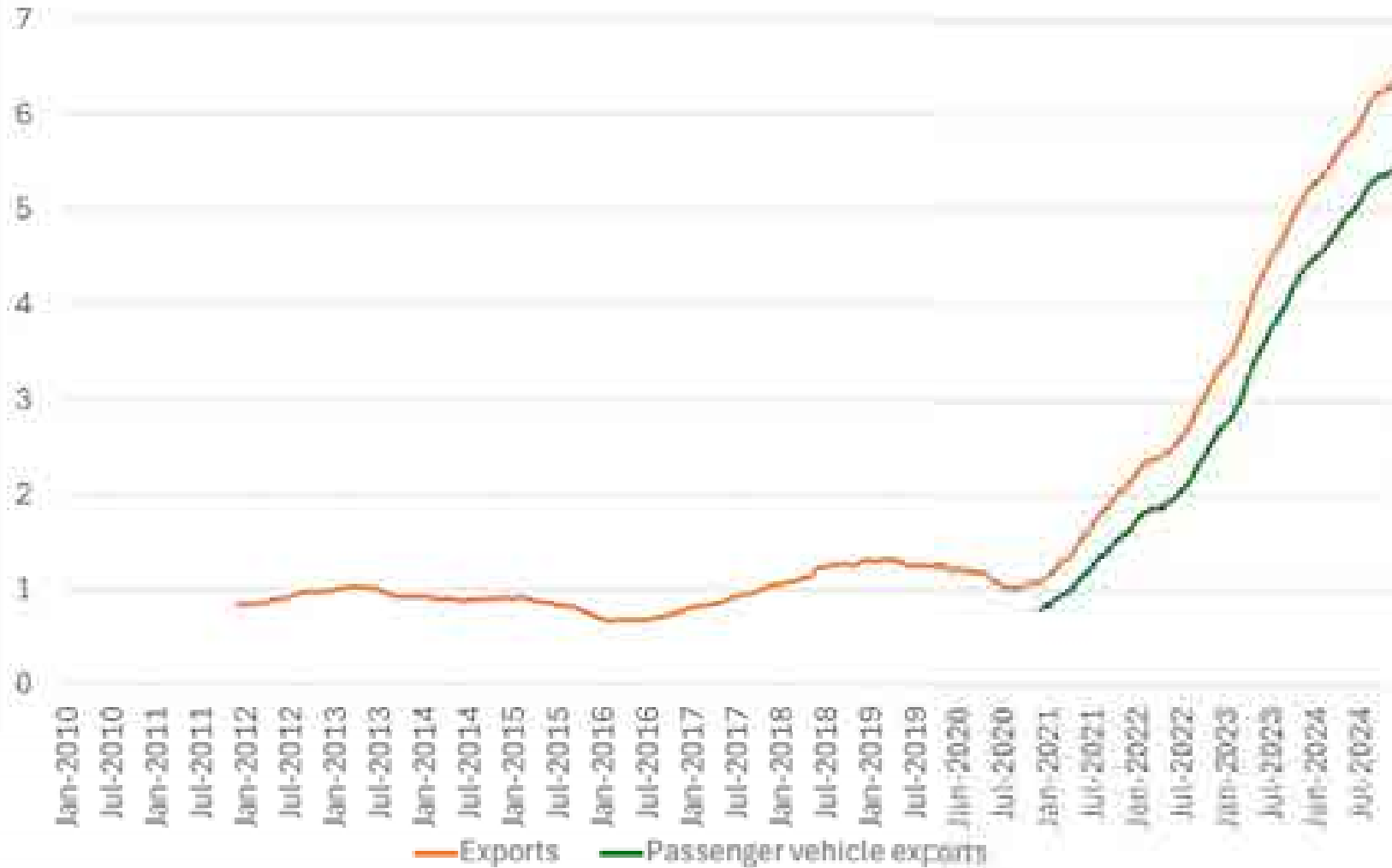
Sources: Eurostat, national sources (Ipsos Analytics) and ECB staff calculations.  
Latest observation: Euro area and South Korea: July 2024; others: August 2024

**Euro area exports of cars**  
(12-month moving average, Index 2018 = 100)



Sources: Trade Data Monitor and ECB staff calculations.  
Latest observation: July 2024

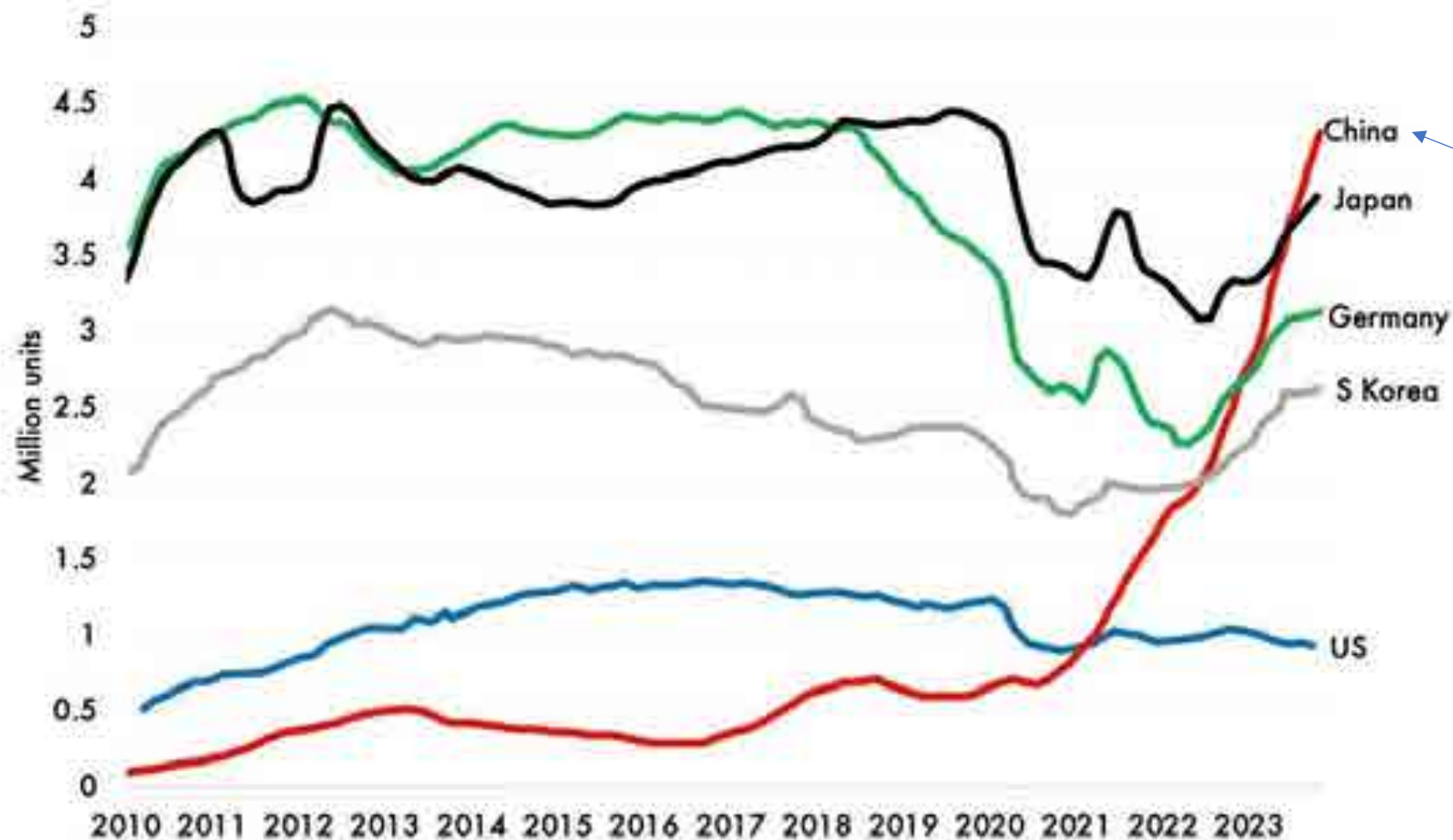
China: vehicle exports  
trailing 12m sums, millions of vehicles



**Chinese cars are driving uphill at lightspeed**

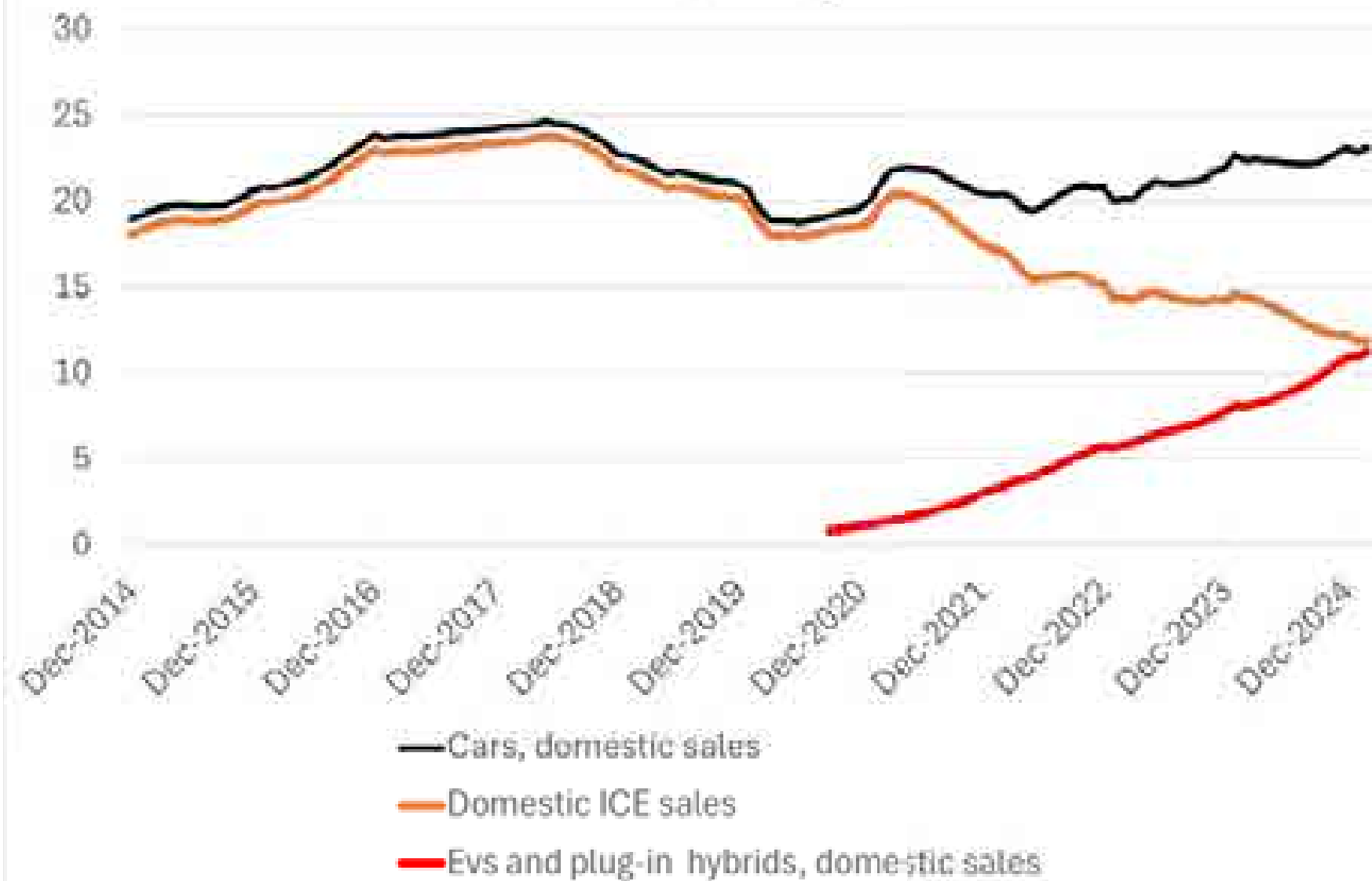


Car exports by country  
source: Gavekal



**China & Car  
Export:  
«From zero  
to hero» in 3  
years**

China: domestic passenger car sales  
millions of cars, trailing 12m sum

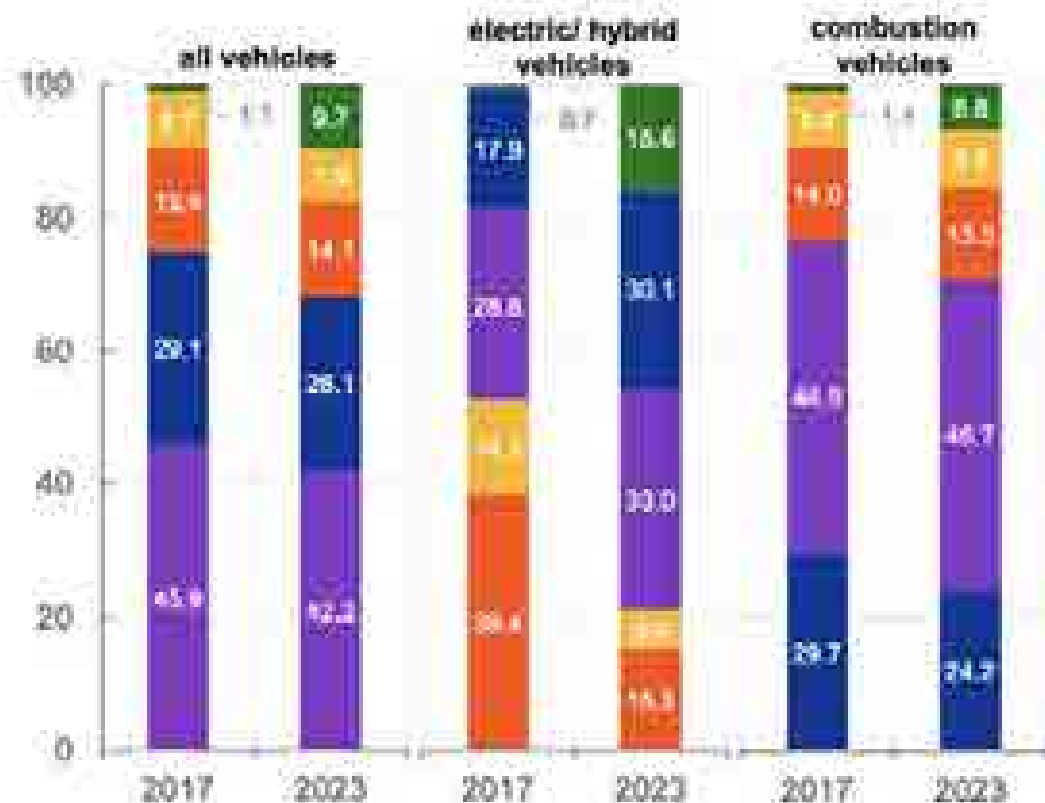


**China:  
Batteries  
fully  
charged**

## Global export market shares by motor vehicle segment

(share of values)

Rest of the world Euro area Japan United States China



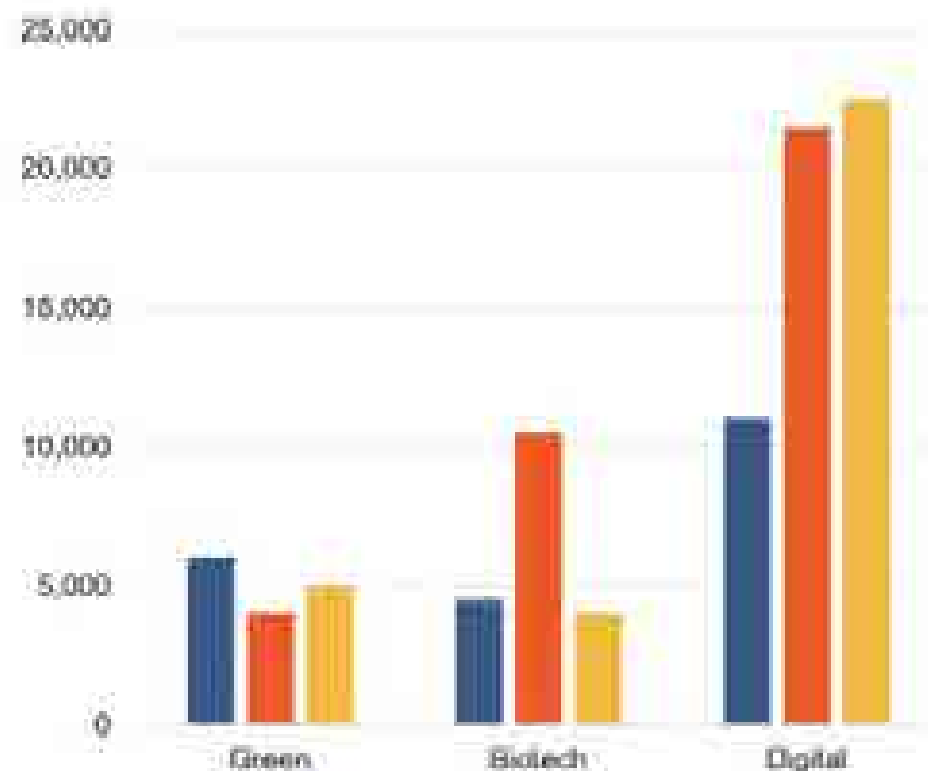
Sources: Trade Data Monitor and ECB staff calculations.

Note: Trade partners are ordered according to the percentage point gains in export market shares between 2017 and 2023. Regions with highest gains are shown on top. Export market share in values as units reporting.

## Patents by technology domain

(number of patents issued in 2020)

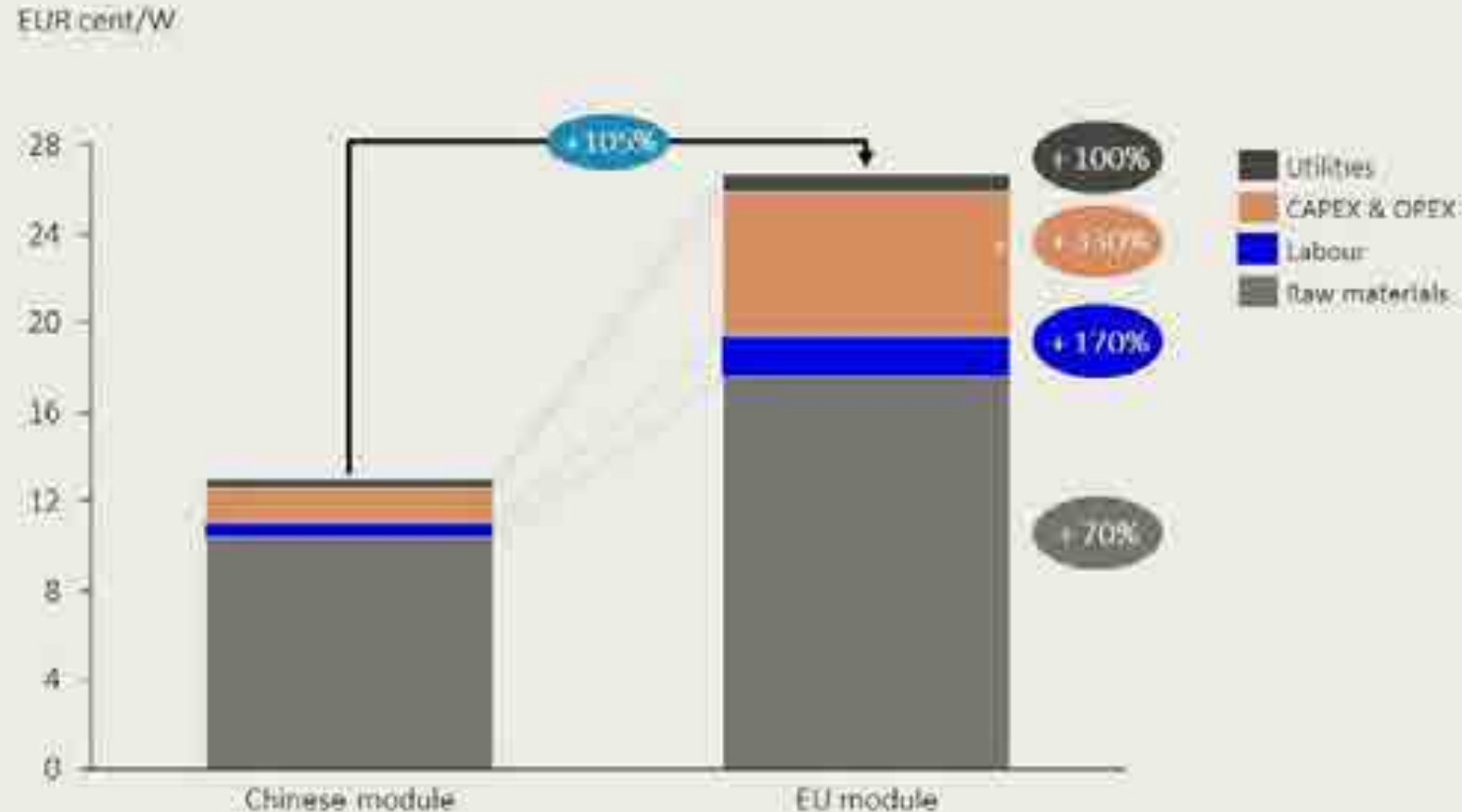
EU US China



Sources: EU Industrial R&D Investment Scoreboard and Patstat.

# EU manufacturing costs of integrated cells: +105% vs China

Observed cost structure comparison in integrated cell and module manufacturing (EUR cent/W)



Source: expert interviews

# EU vs USA? Mid-tech vs High-tech

Top-three R&D spenders and their industries in the EU and the US

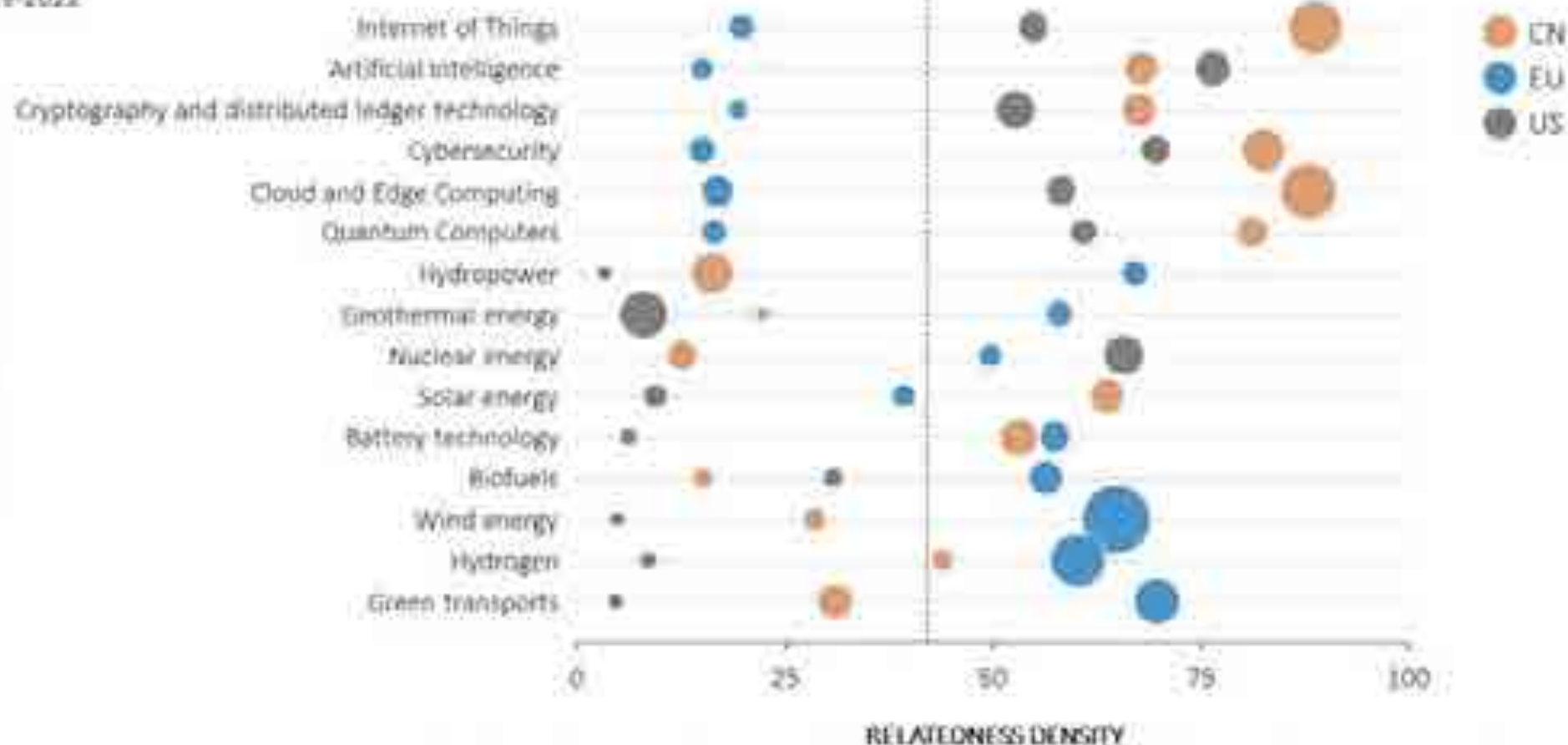
Top 3 R&D spenders and their industries in the EU and the US			
	2003	2012	2022
US	Ford (auto) Pfizer (pharma) GM (auto)	Microsoft (software) Intel (hardware) Merck (pharma)	Alphabet (software) Meta (software) Microsoft (software)
EU	Mercedes-Benz (auto) Siemens (electronics) VW (auto)	VW (auto) Mercedes-Benz (auto) Bosch (auto)	VW (auto) Mercedes-Benz (auto) Bosch (auto)

Source: Fuest et al. (2024). Based on the EU Industrial R&D Investment Scoreboard

## The EU's position in complex (digital and green) technologies

2019-2022

Technology Complexity Index

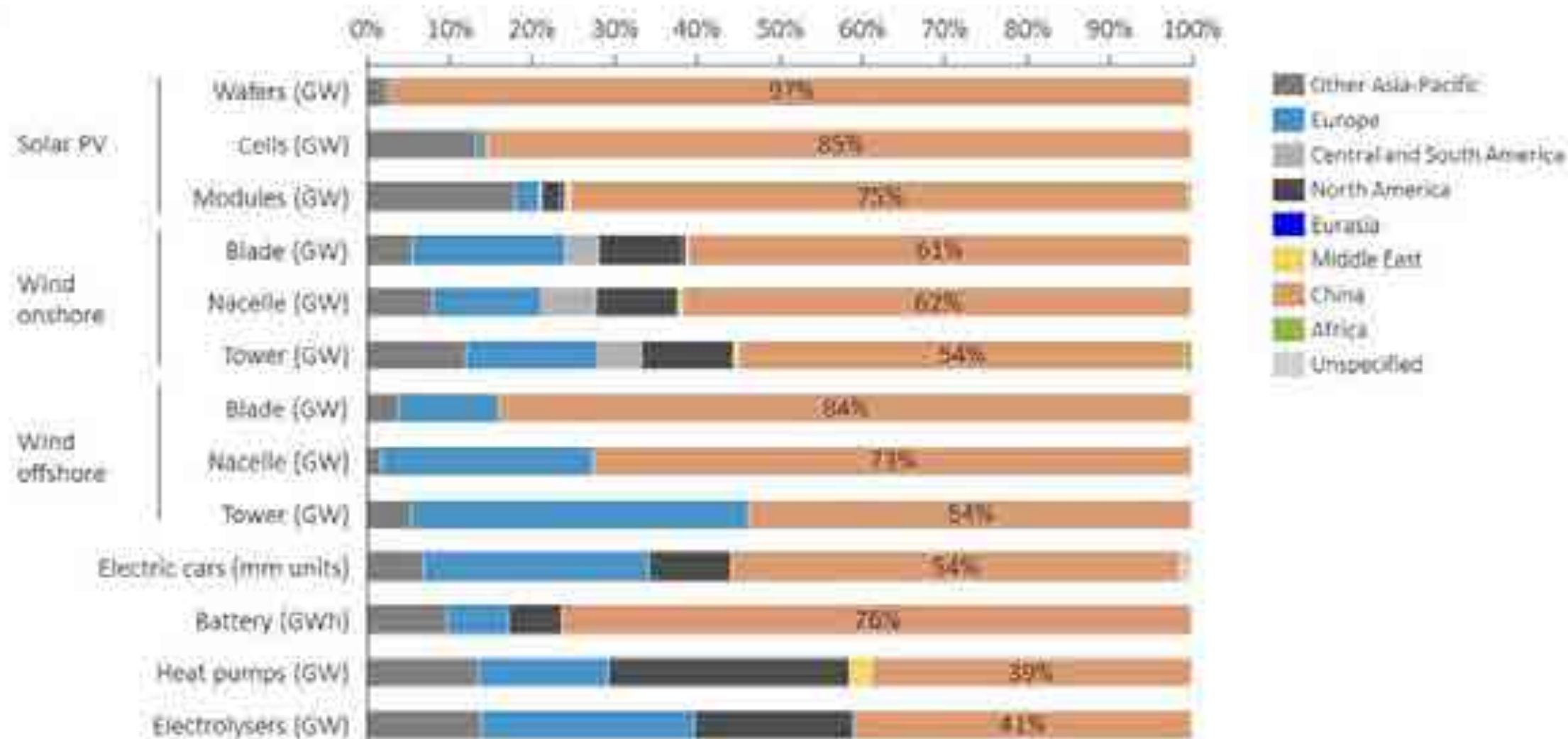


Notes: The results are based on an analysis of patent data to understand the complexity and potential for specialisation in different technology areas. On the y-axis, technologies are ranked according to how advanced or complex they are, with scores ranging between 0 (less complex) and 100 (more complex). The x-axis (showing the relatedness density) represents how easily a country can build comparative advantage in a particular technology, depending on how closely related it is to other technologies the country is already strong in. The size of the bubbles shows how much each country has already specialised in a technology, using a measure of 'revealed comparative advantage' (RCA), which reflects their competitive strength in that field.



## Clean technology manufacturing capacity by region

2021

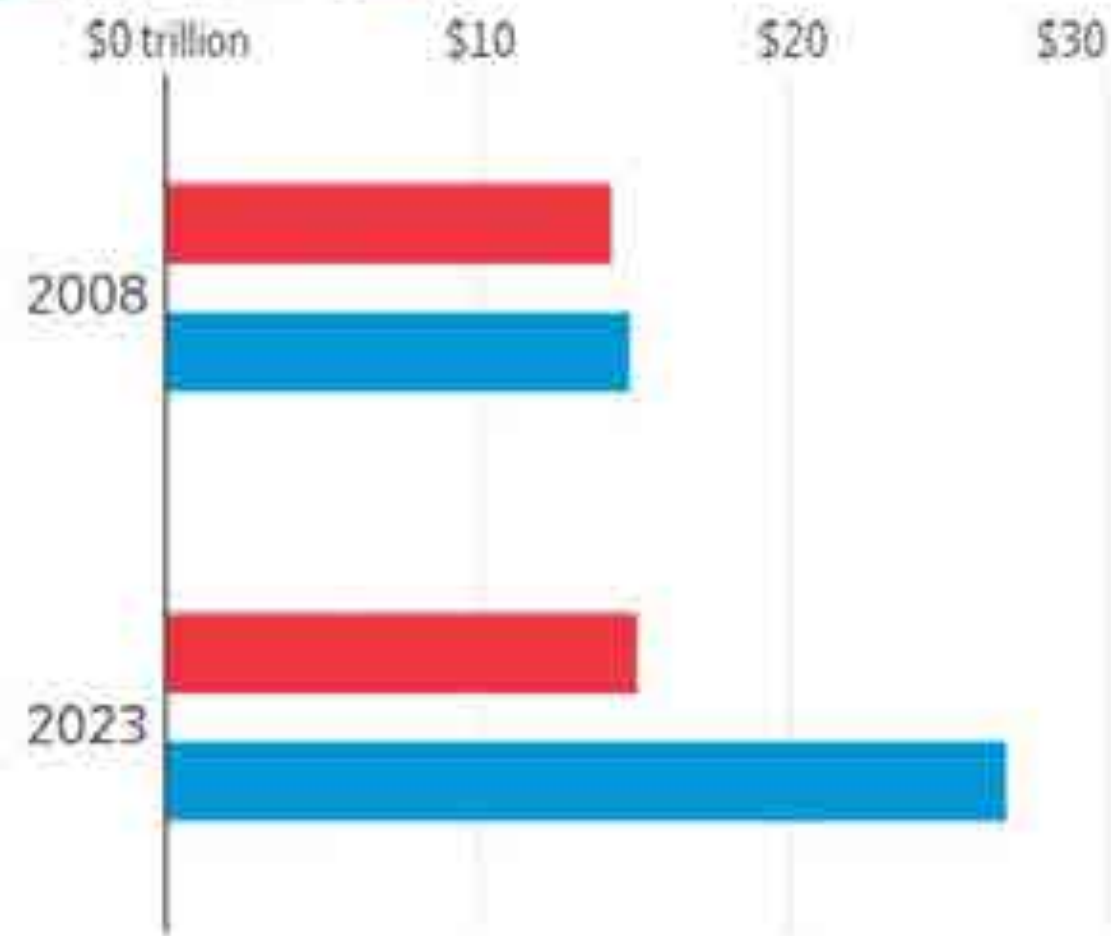


Source: European Commission, 2024. Based on IEA, Bruegel.



## Gross domestic product, current prices

■ Eurozone ■ U.S.

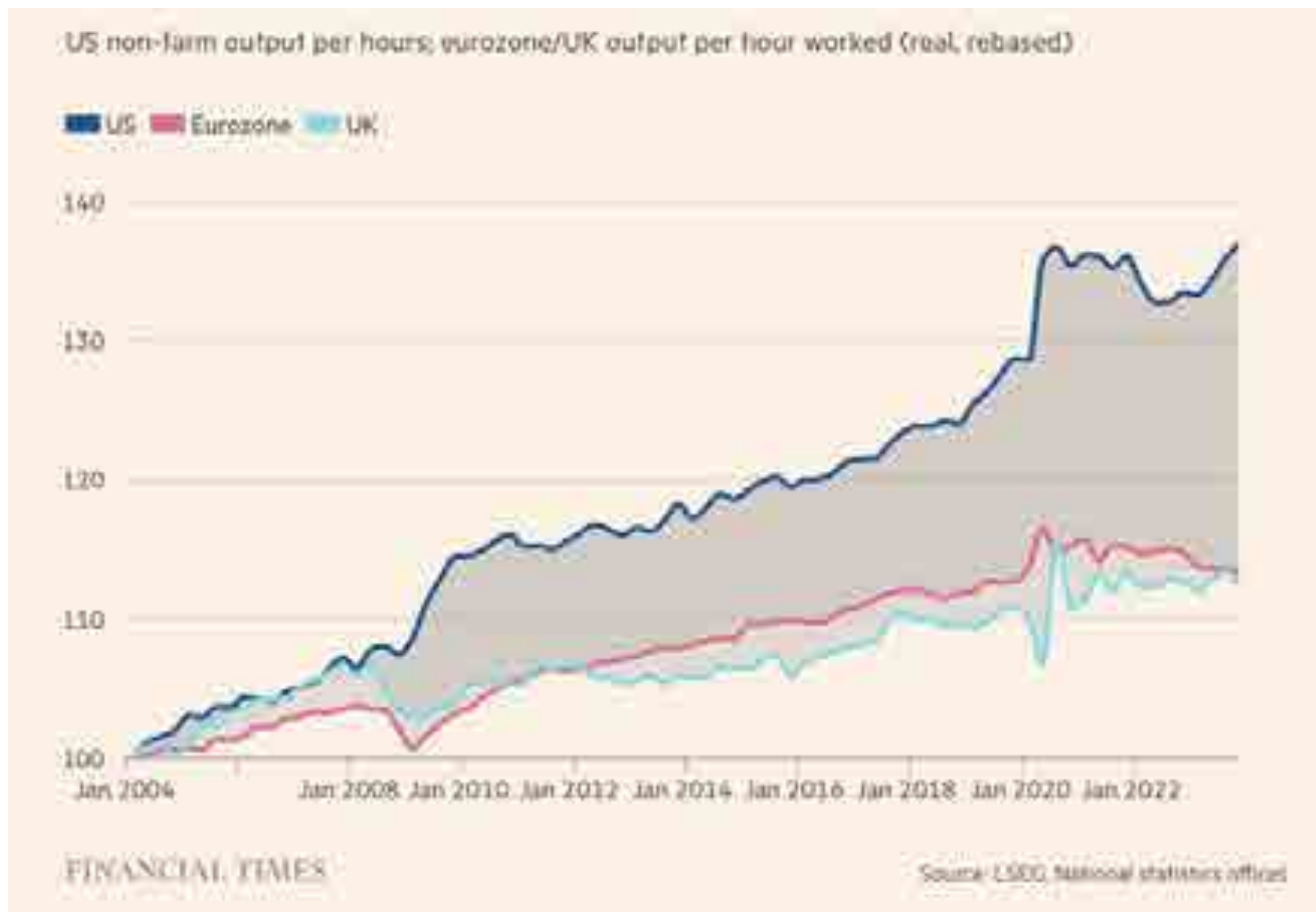


Source: International Monetary Fund

**15 years ago, Eurozone & USA had the same GDP levels**



# Europe and the «productivity syndrome»



**Figure 1.3. Domestic- and Foreign-Born Workers in the Labor Force**

(Index, January 2019 = 100)

**125 - 1. North America**



**125 - 2. Europe**

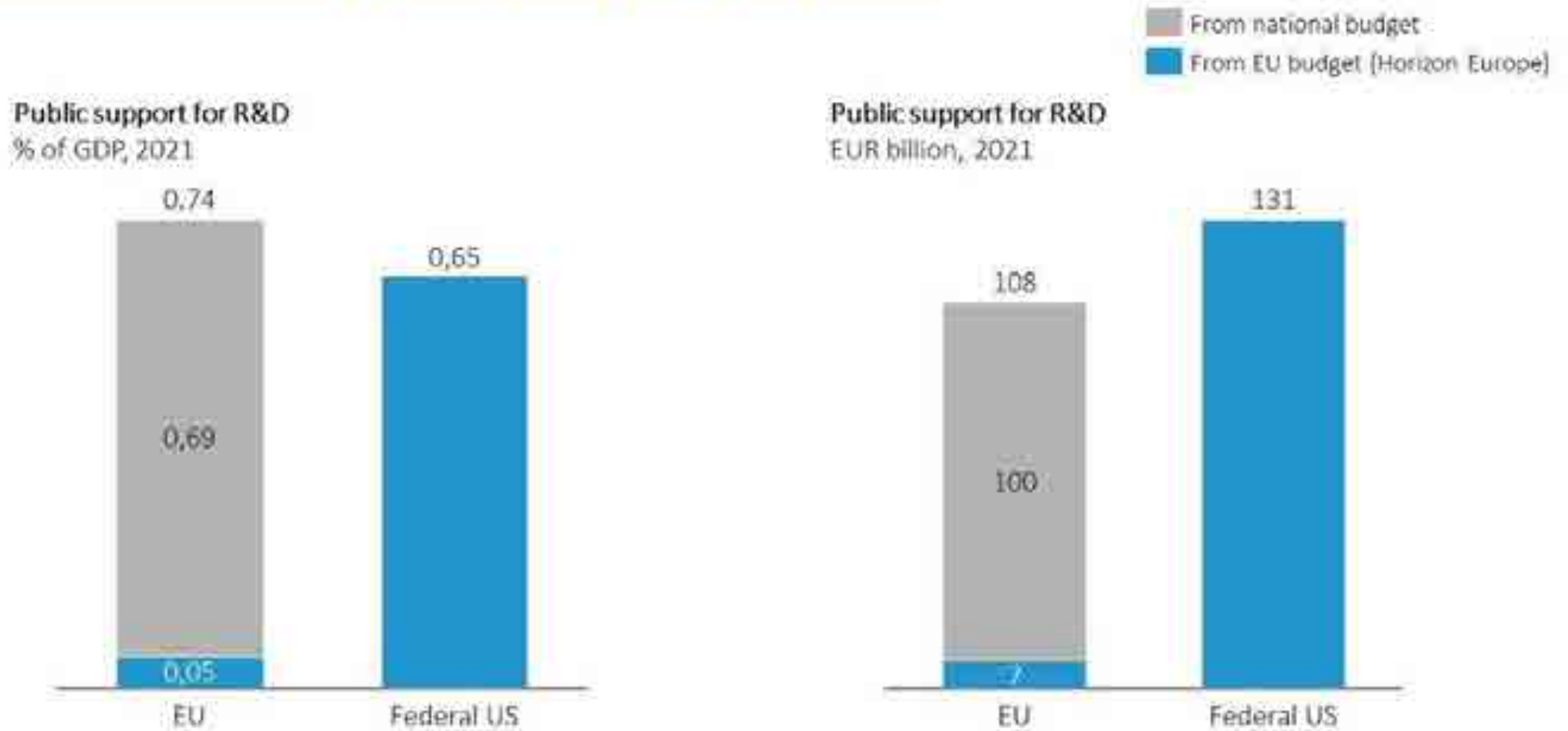


Sources: Eurostat; Haver Analytics; US Bureau of Labor Statistics; and IMF staff calculations.

**Workers from all  
the world, come  
join us...**

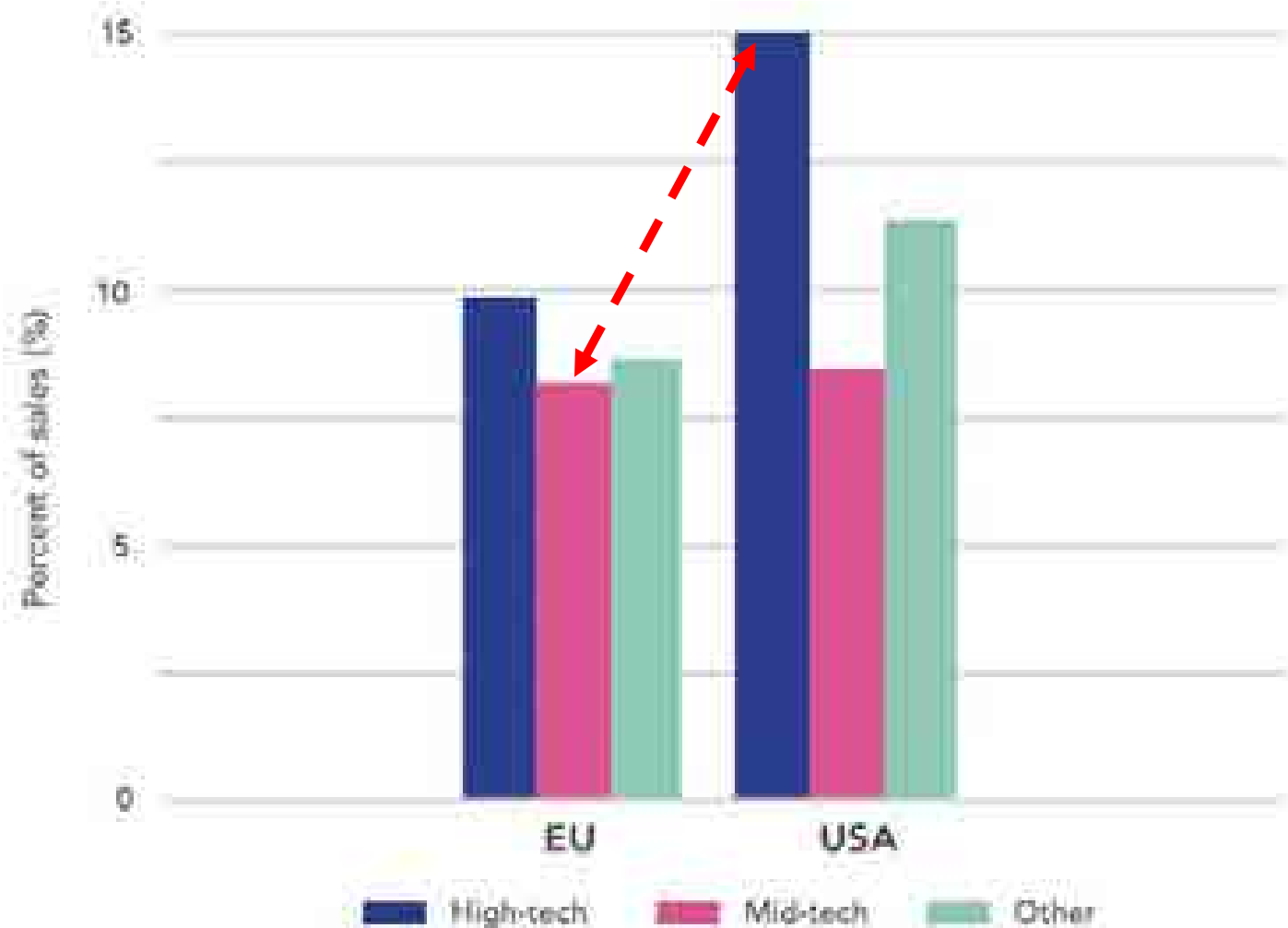
# R&D: the limits of EU fragmentation

## State versus federal source of R&D funding in the EU and US



Source: European Commission, 2024. Based on Eurostat and OECD.

Average profit margin by sector (2009-2022)



Notes: profit margin is defined as profits divided by net sales.  
Source: author's calculations based on EU Industrial R&D Scoreboard

# EU vs USA?

## Mid-tech vs High-tech



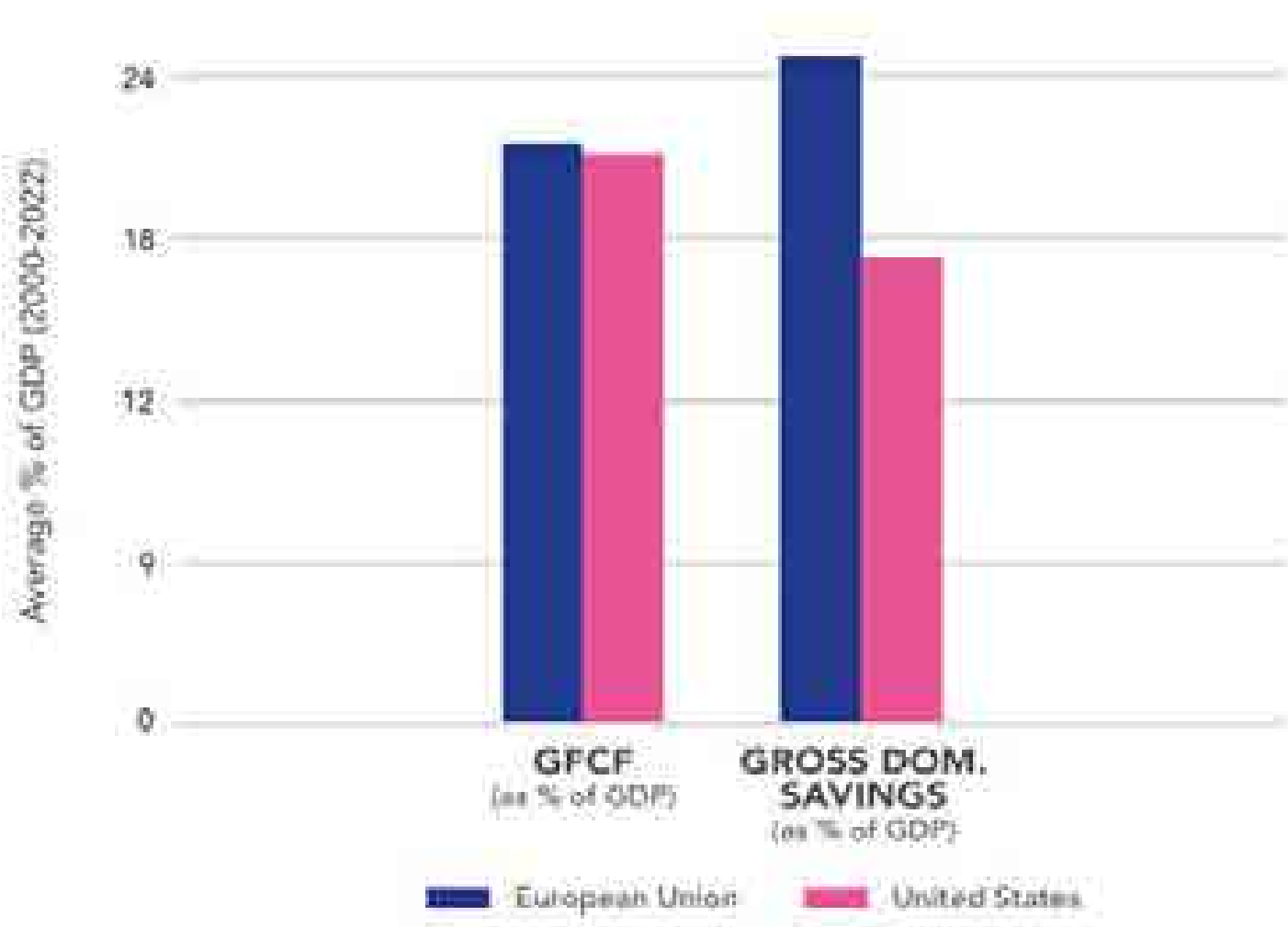
Breakdown of GFCF main components



**EU vs USA?**  
**Bricks vs**  
**Clicks**

Notes: Data extracted on 16 May 2024 17:15 UTC (GMT).

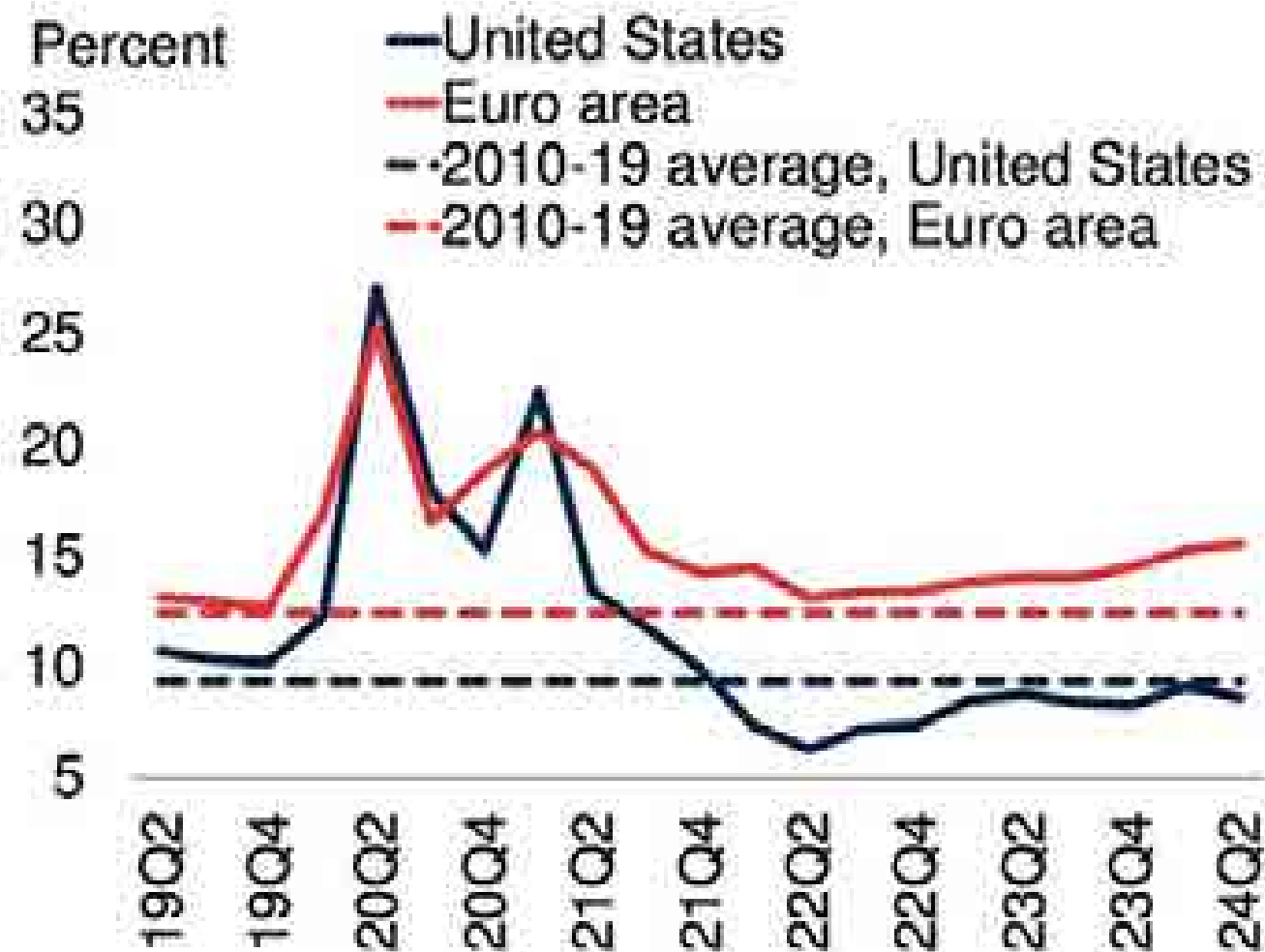
Source: OECD.Stat



**It's not (all)  
about the  
money,  
darling...**



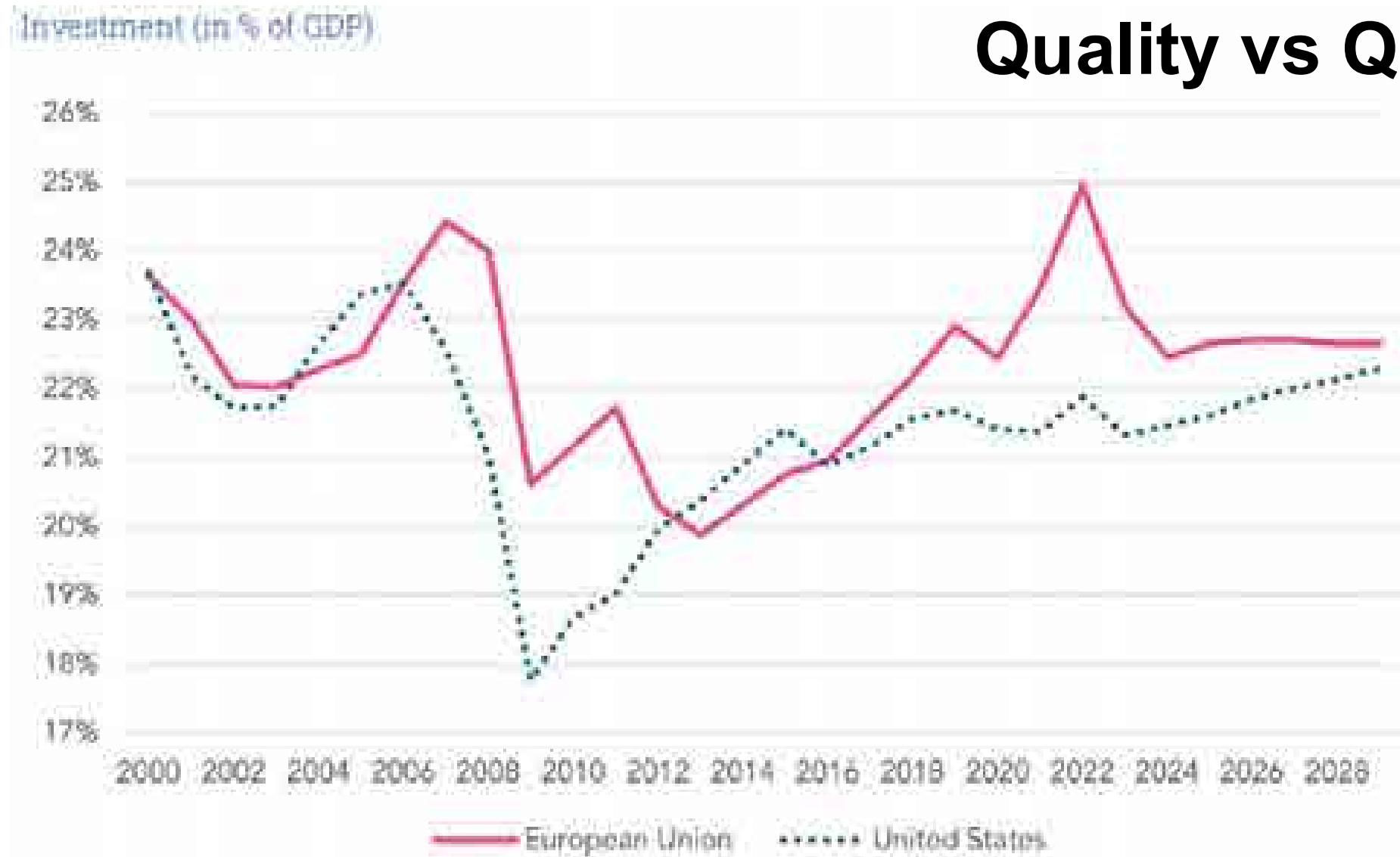
## C. Gross personal savings rate in the United States and euro area



# Ants and Grasshoppers

# USA vs EU?

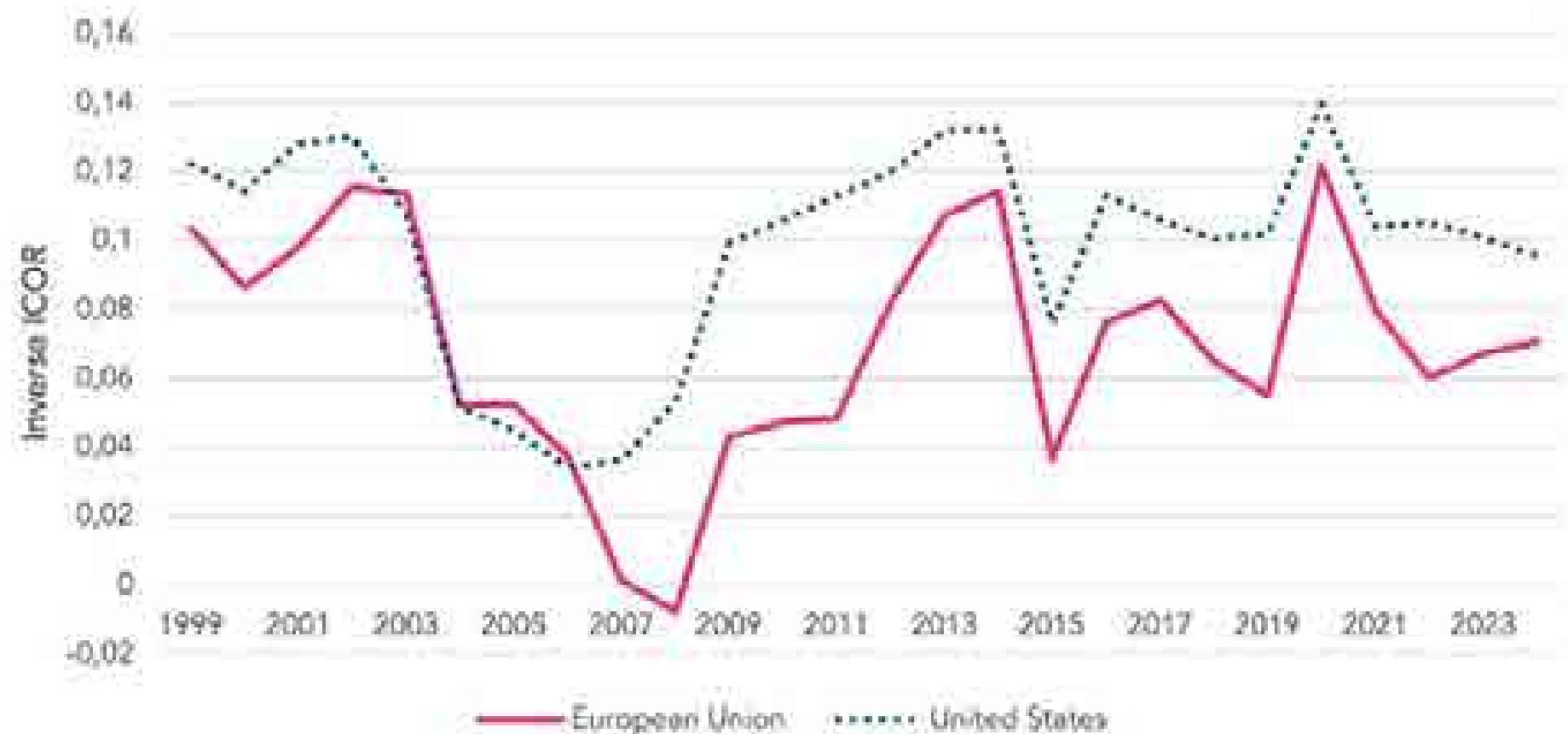
## Quality vs Quantity



# USA vs EU?

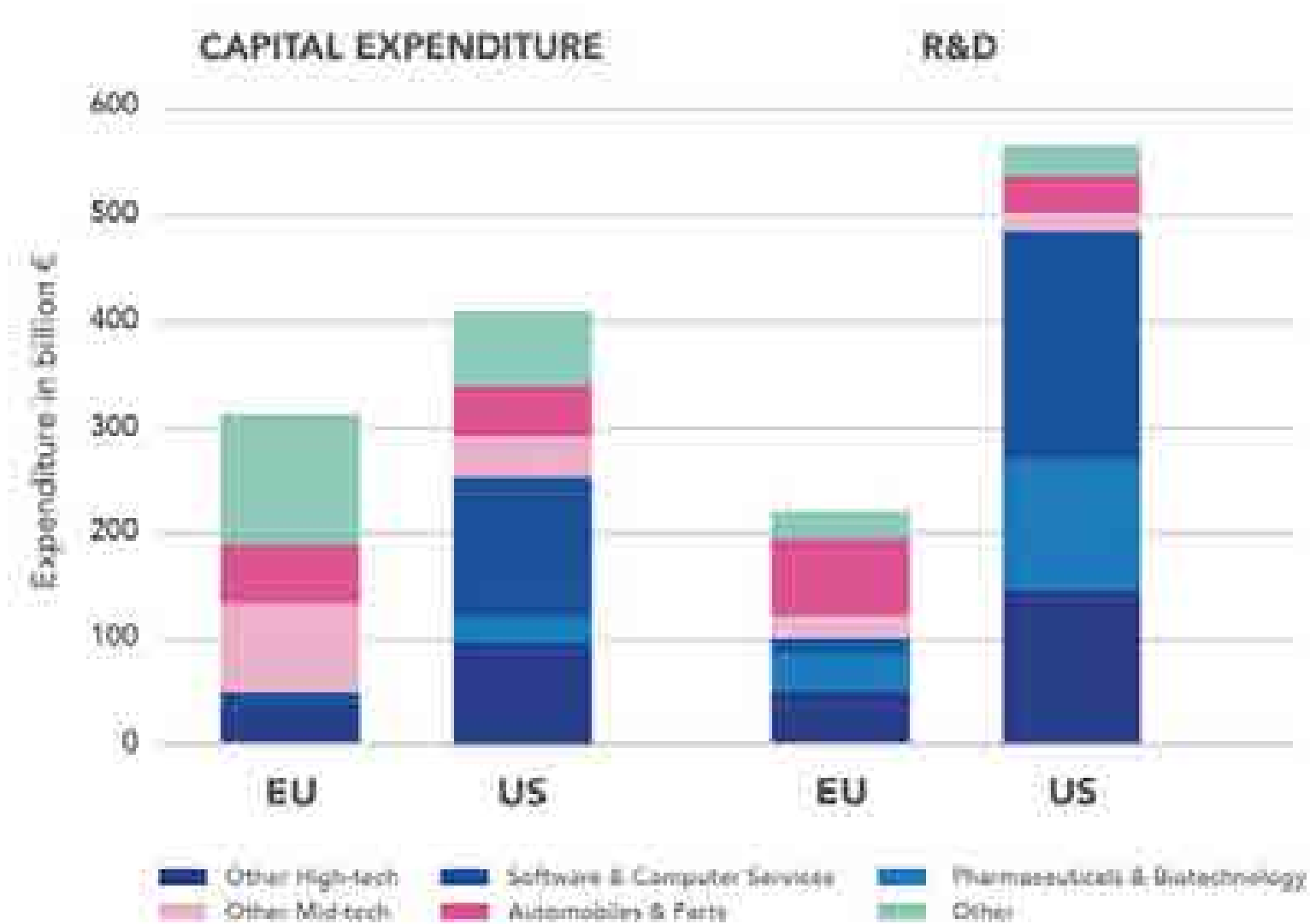
## Quality vs Quantity

Estimated return on investment (5-years rolling average)



Notes: this figure presents the inverse of the Incremental Capital Output Ratio (ICOR), calculated as GDP growth between years  $t$  and  $t + 5$  divided the average value of investment-to-GDP ratio over the same period.

Source: Authors' calculations based on World Economic Outlook 2024.



**USA vs EU?**  
**Quality vs**  
**Quantity**

# A new Marshall Plan for Europe.

## Annual additional investment needs (2025-2030)

in EUR billion

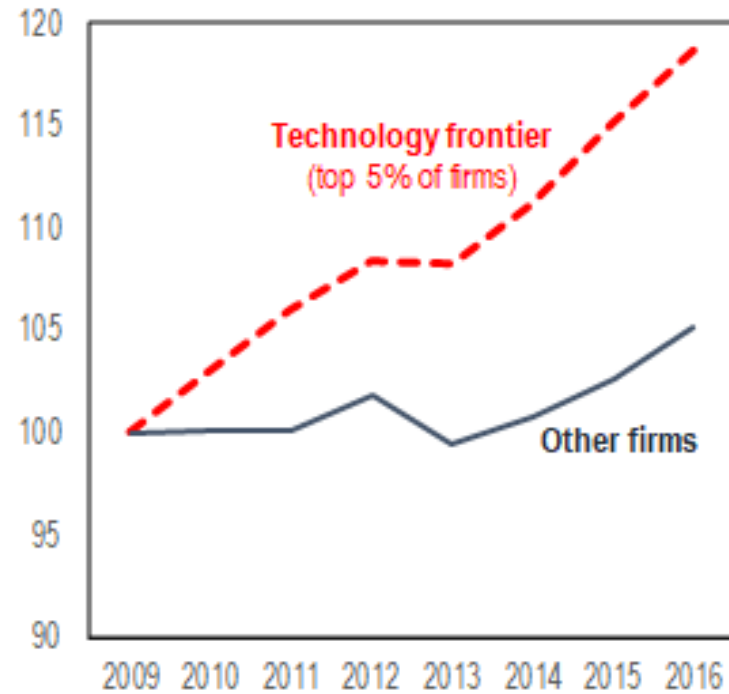
Investment category		2025-2030
Achieving the energy transition	Energy (including the deployment of clean technologies)	300
	Transport (including charging infrastructure)	150
	Total	450
Becoming a leader in digital technologies		150
Strengthening defence and security capabilities		50
Boosting productivity through breakthrough innovation		100;150
<b><u>Total annual additional investment needs</u></b>		<b><u>750;800</u></b>
<i>ECB estimate</i>		<i>771</i>

Source: Own calculations based on Commission estimates

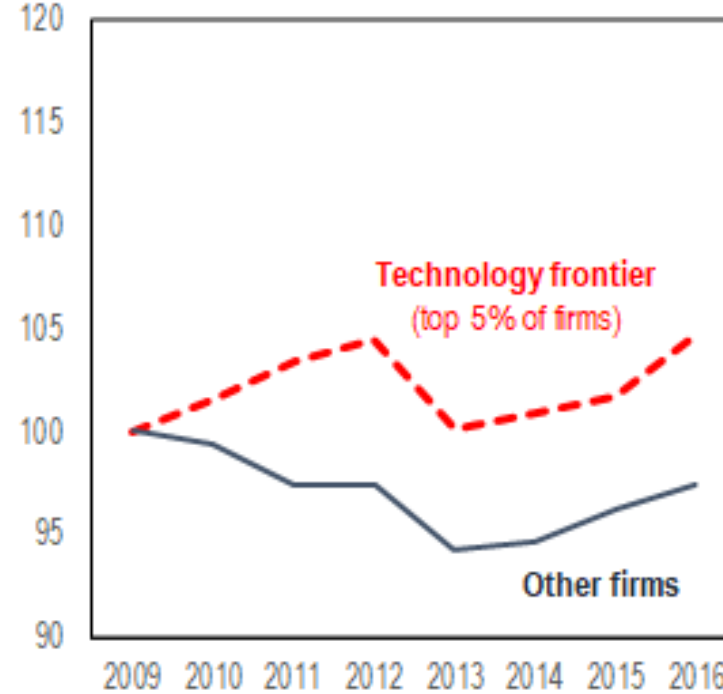
**Figure 2: Productivity dispersion across firms has increased, especially in digital intensive sectors**

Average multifactor productivity (2009=100)

**Panel A: Industries with high digital intensity**



**Panel B: Industries with low digital intensity**



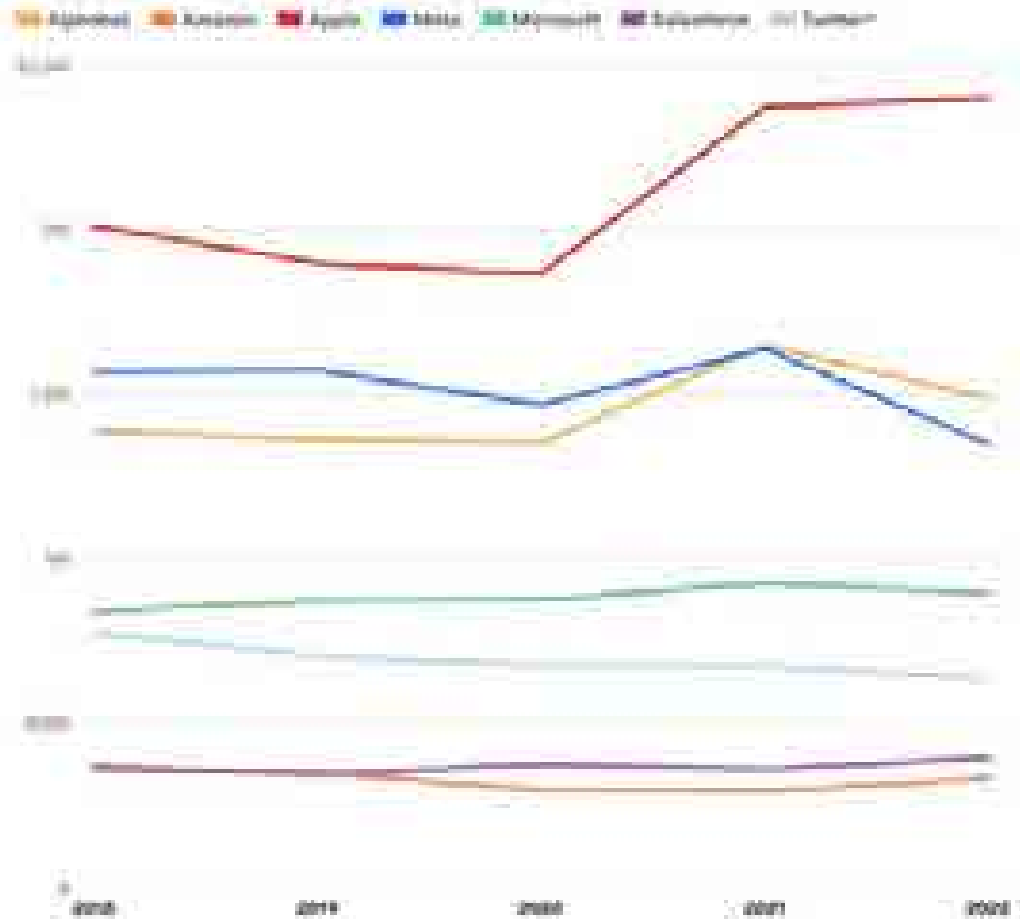
**High-tech  
means higher  
productivity**

*Note:* The "technology frontier" is measured by the three-year moving average of log multifactor productivity on average among the top 5% of companies with the highest productivity levels in each industry and year, across 25 OECD countries. The "other firms" lines correspond to the average of the same variable among all firms excluding the top 5% in each industry and year.

*Source:* OECD calculations using Orbis data, following the methodology in Andrews et al. (2016)

# Productivity of «Big Platforms»

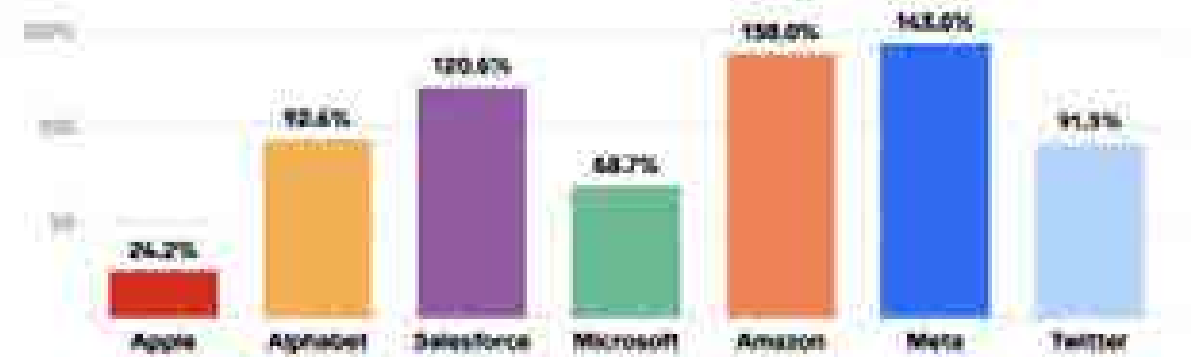
Revenue per employee, 2018–2022



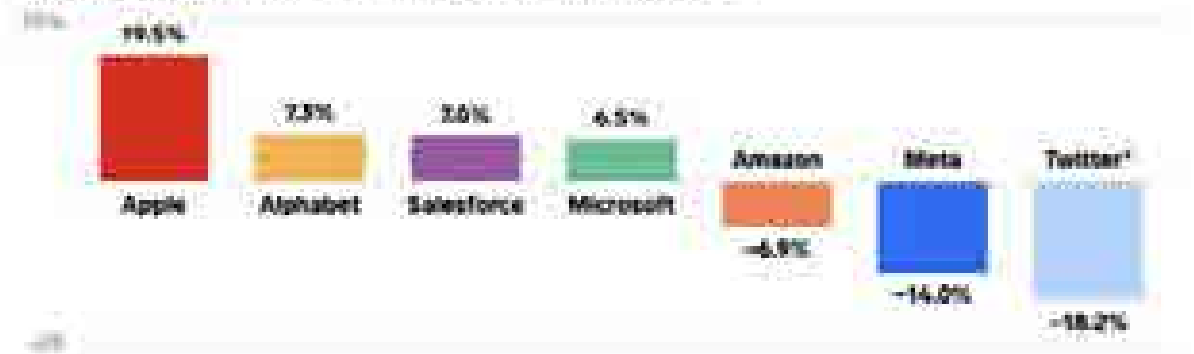
Source: Reuters, Bloomberg, and various other financial news outlets.  
 Note: Data is based on the most recent available data.

Number of employees vs. revenue per employee from 2018 to 2022

Percent change in number of employees from 2018 to 2022



Percent change in revenue per employee from 2018 to 2022

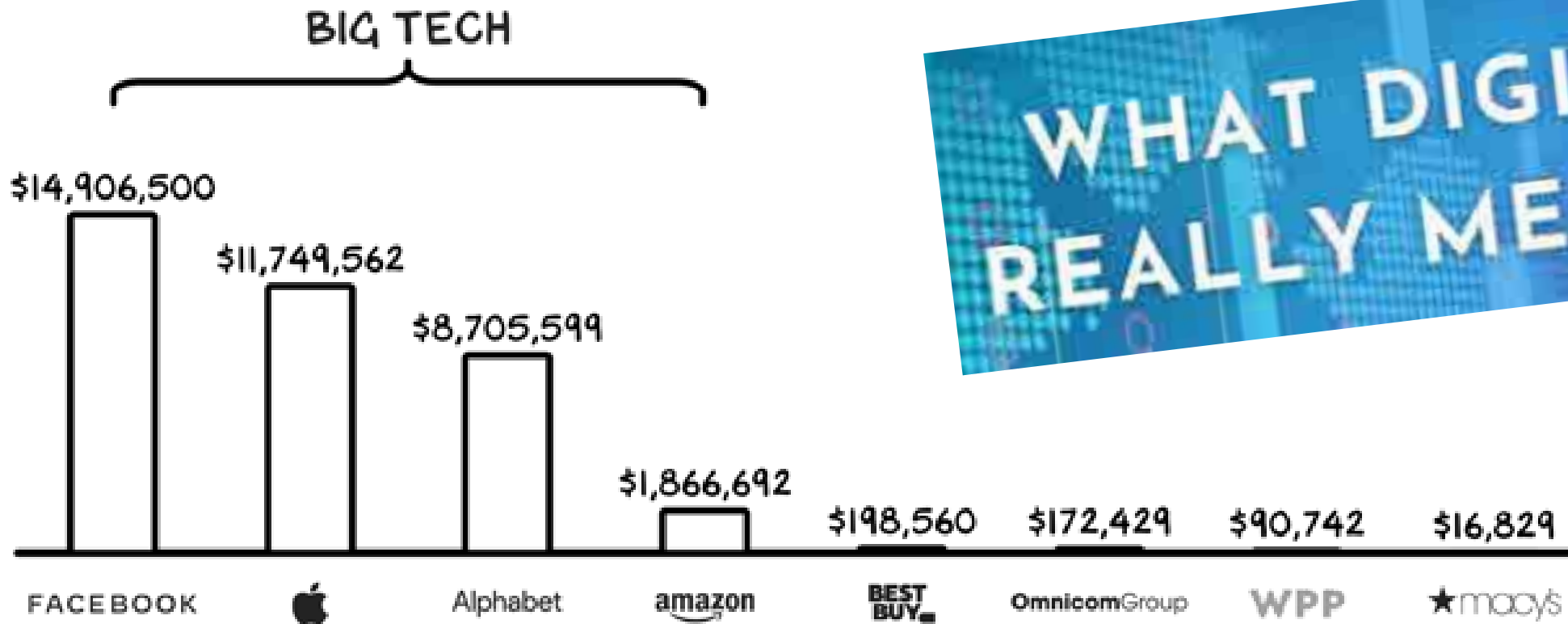


Note: Twitter's 2022 revenue is based on its most recent financial report.  
 Data is based on the most recent available data.



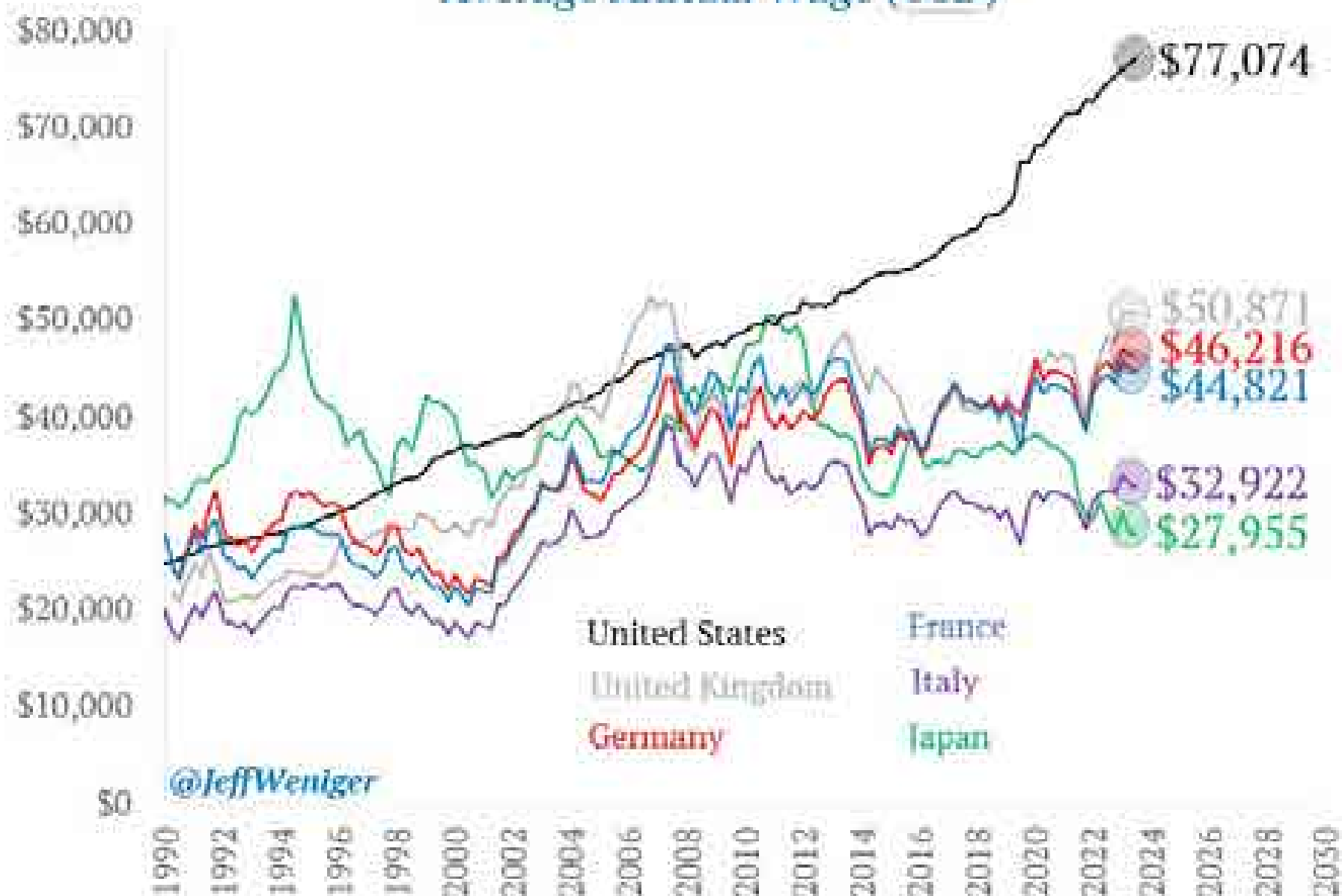
# High-tech means higher value

## MARKET CAP PER EMPLOYEE



SOURCE: PROF G ANALYSIS OF SEEKING ALPHA AND MARCOTRENDS DATA.

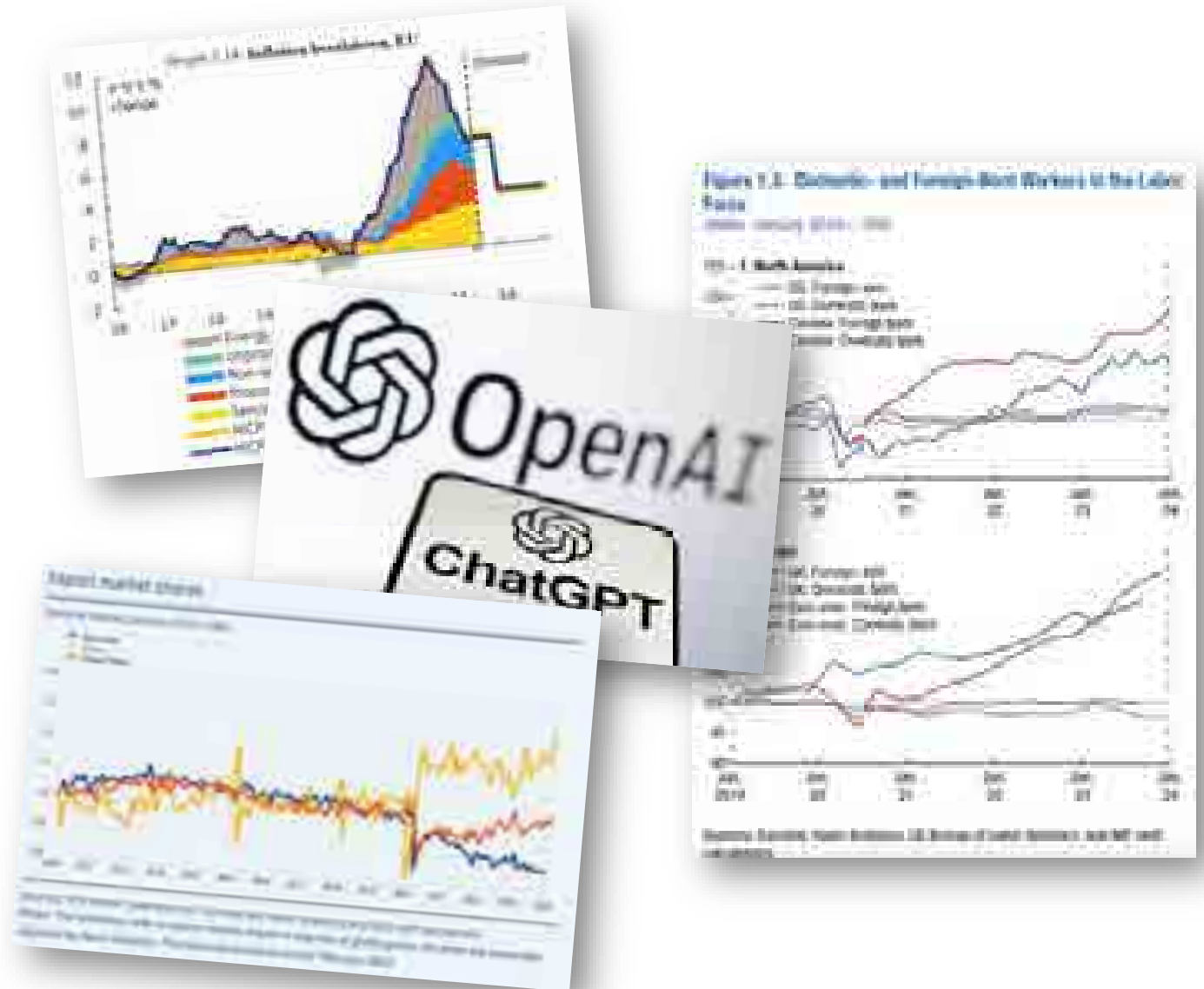
## Average Annual Wage (USD)



**USA vs EU:  
diverging  
wage levels**

# THE GEOPOLITICAL, MACROECONOMIC, AND TECHNOLOGICAL DRIVERS OF CHANGE

1. A post-global world
2. A post-green world
3. A post-digital world
4. Challenges and opportunities for CIOs



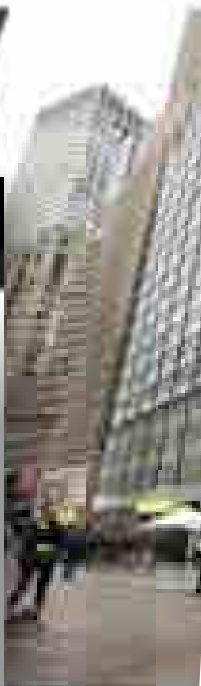
# FAREWELL, «NET ZERO»...

## The Biggest US Banks Have All Backed Out of a Commitment to Reach Net Zero

In the lead up to the inauguration, the six largest US banks left a voluntary alliance with the UN to reach net zero by 2050. Now, critics are calling for new climate laws.



## Top American banks exit net zero alliance: What does this mean for their European peers?



## ESG round-up: Japanese bank exits Net-Zero Banking Alliance

The Japanese bank has become the first Japanese bank to leave the Net-Zero Banking Alliance (NZBA), according to the alliance's website. A spokesperson for the bank confirmed the departure to Bloomberg. The initiative has experienced a swathe of exits this year, including from major US banking groups including JPMorgan, Citi and Goldman Sachs, as well as Canadian banks and Macquarie in Australia.

By Bloomberg | 14 April 2023

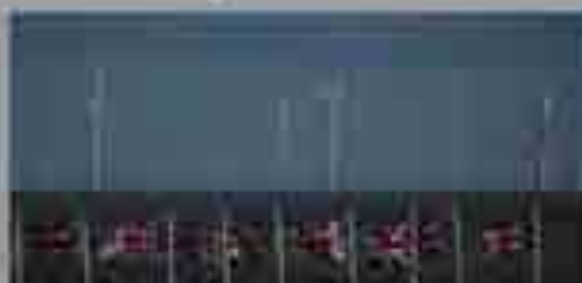


Sumitomo Mitsui Financial Group has become the first Japanese bank to leave the Net-Zero Banking Alliance (NZBA), according to the alliance's website. A spokesperson for the bank confirmed the departure to Bloomberg. The initiative has experienced a swathe of exits this year, including from major US banking groups including JPMorgan, Citi and Goldman Sachs, as well as Canadian banks and Macquarie in Australia.

Bloomberg

Newsletters  
Market Data  
Research

## Why Net Zero May Be Suited for Another Age





**WELCOME BACK, «CLEAN & INDUSTRIAL» INSTEAD OF «GREEN»...**

## GREEN GROWTH REVISITED: THE EU'S CLEAN INDUSTRIAL DEAL

28 February 2024



Reuters

## Europe plans to ease sustainability reporting rules to compete globally

By Kathy Ackert and Julia Payne

Published 28 Feb 2024 10:00 AM GMT+0 | Updated 10 days ago

Ω Aa <

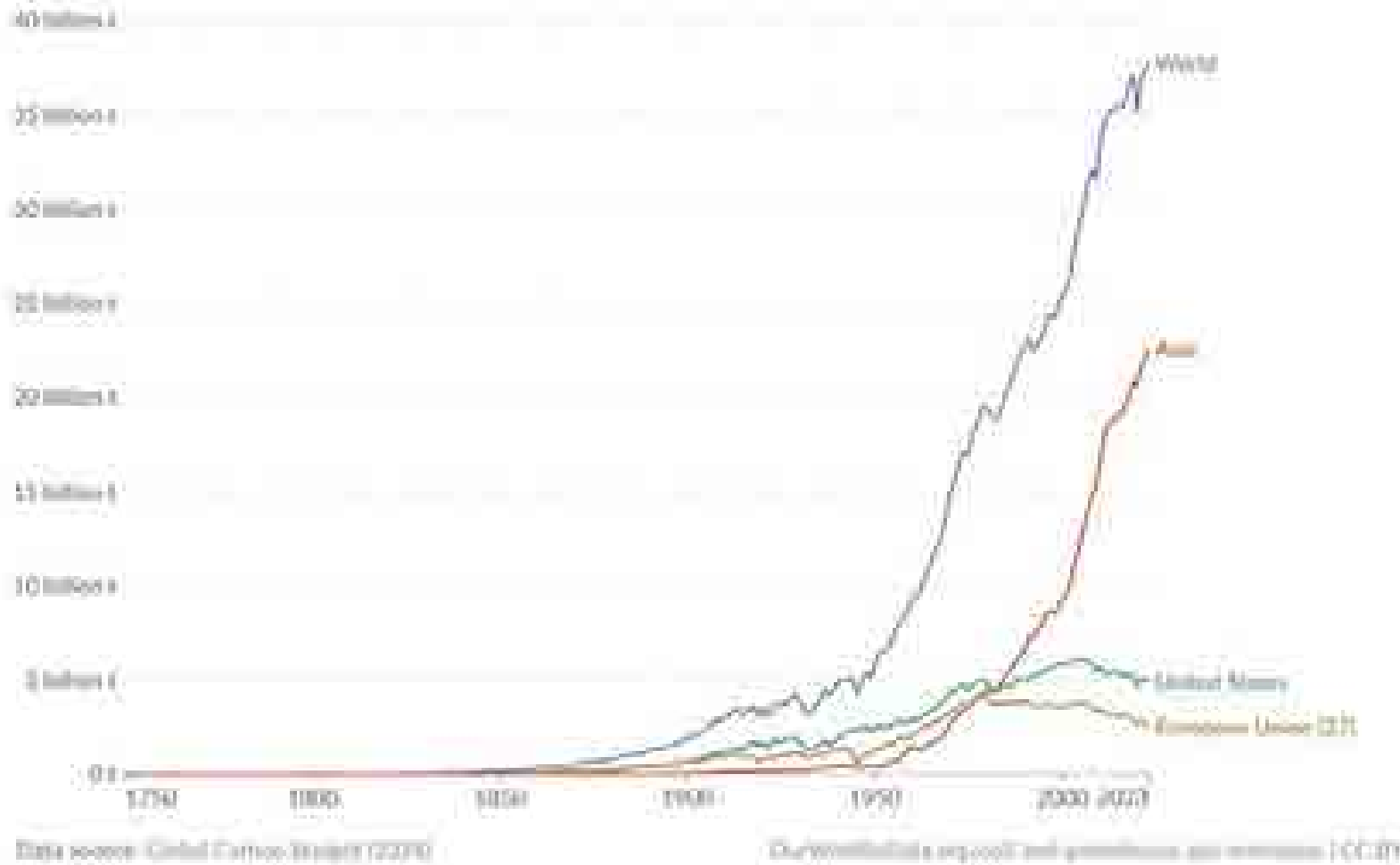
## European Industry Summit 2025 The Clean Industrial Deal



## Annual CO<sub>2</sub> emissions

Carbon dioxide (CO<sub>2</sub>) emissions from fossil fuels and industry<sup>1</sup> (land-use change is not included)

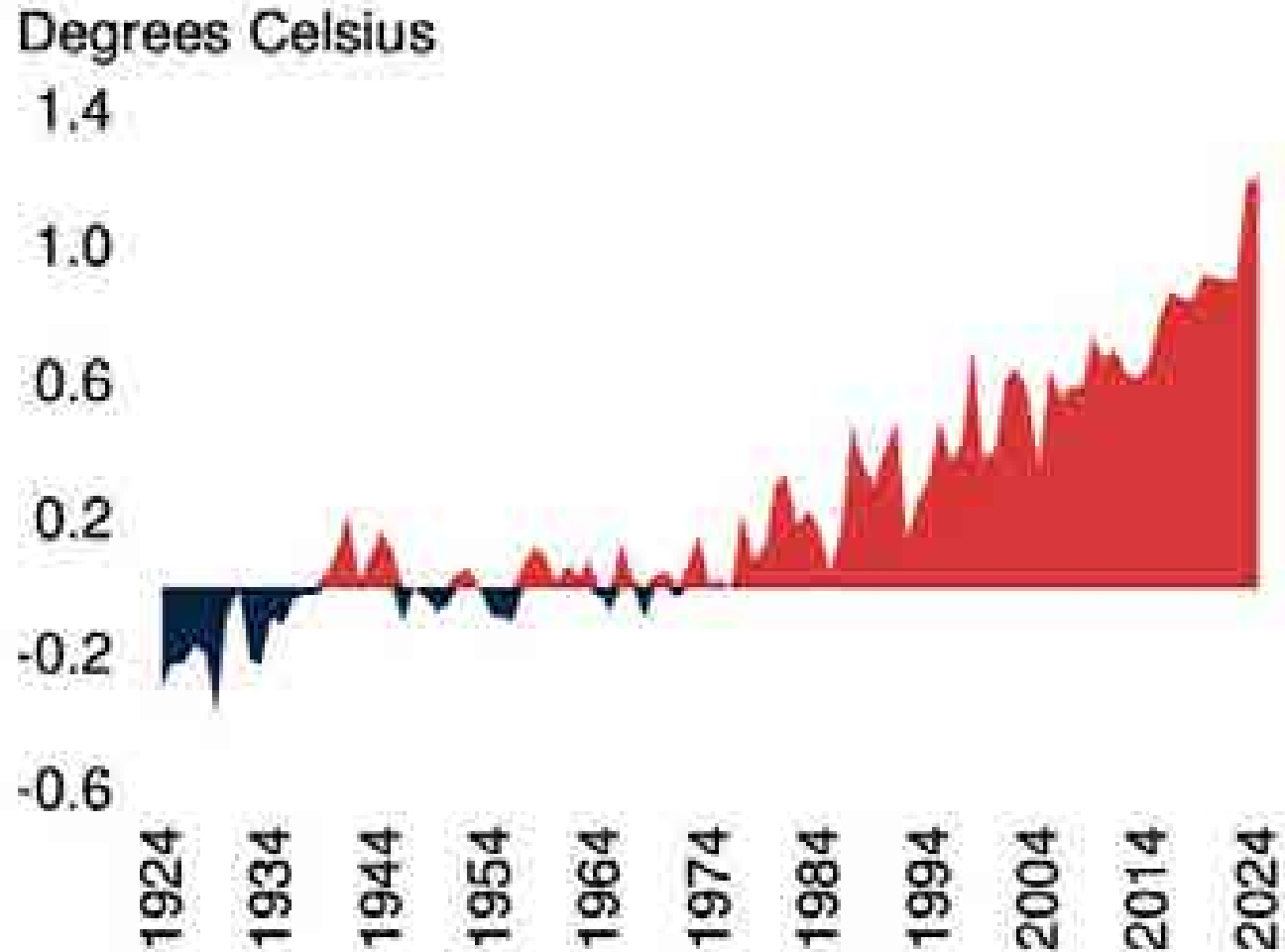
Our World  
in Data



1. Fossil emissions. Fossil emissions measure the quantity of carbon dioxide (CO<sub>2</sub>) emitted from the burning of fossil fuels, and directly from industrial processes such as cement and steel production. Fossil CO<sub>2</sub> includes emissions from coal, oil, gas, flaring, cement, steel and other industrial processes. Fossil emissions do not include land use change, deforestation, reforestation, or vegetation.

**We should  
have  
reduced  
emissions,  
but...**

## D. July temperature anomalies relative to 1901-2000 average

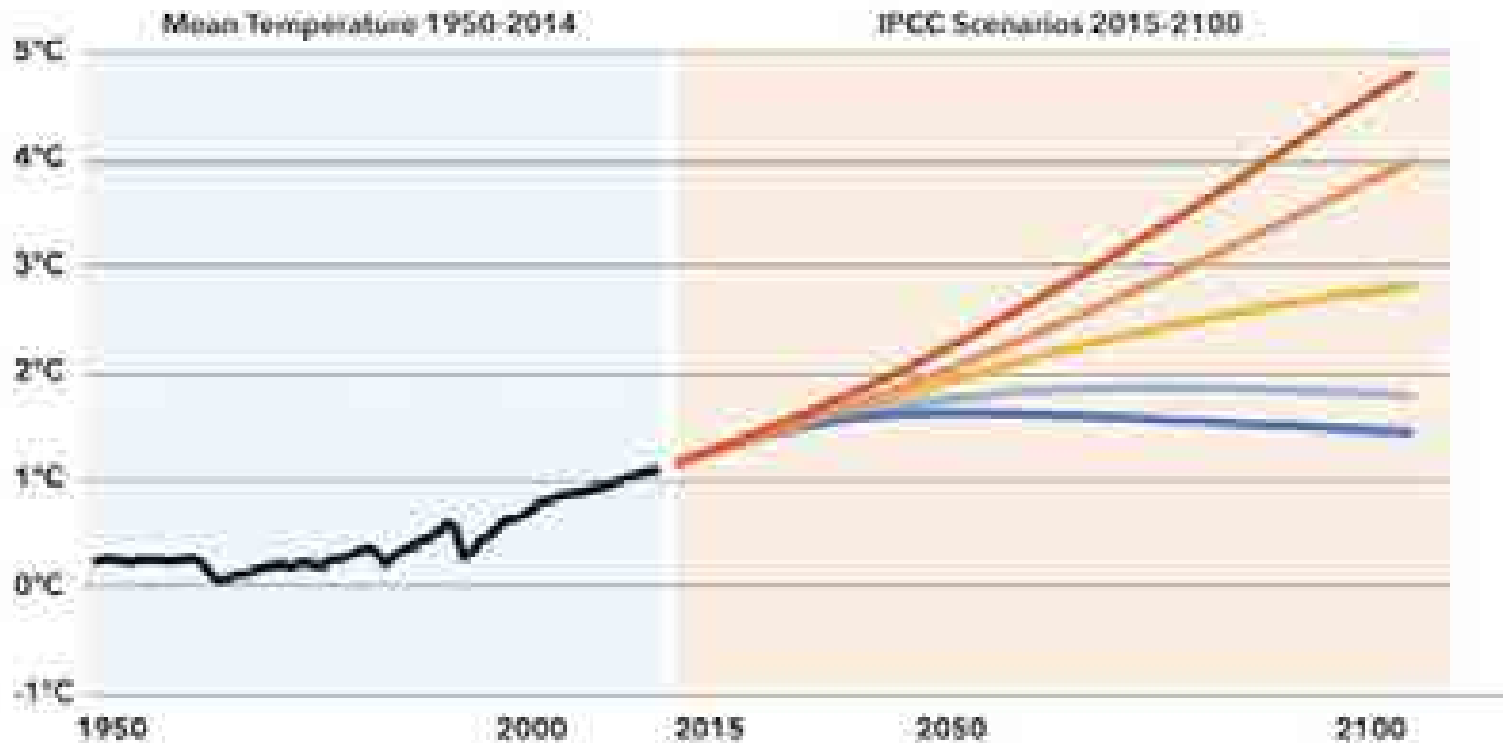


**We should  
have been  
cooler,  
but...**



## Figure 1.4 Uncertain Future

(temperature change in °C, scenarios used by the IPCC)



MEAN TEMPERATURE 1950-2014  
HIGH EMISSIONS (SSP3-7.0)  
LOW EMISSIONS (SSP1-2.6)  
VERY HIGH EMISSIONS (SSP5-8.5)  
INTERMEDIATE EMISSIONS (SSP4-6.0)  
VERY LOW EMISSIONS (SSP1-1.9)

**There is significant uncertainty about the trajectory of global emissions and as a result global warming.**

Source: IPCC, 2021 Summary for Policymakers.

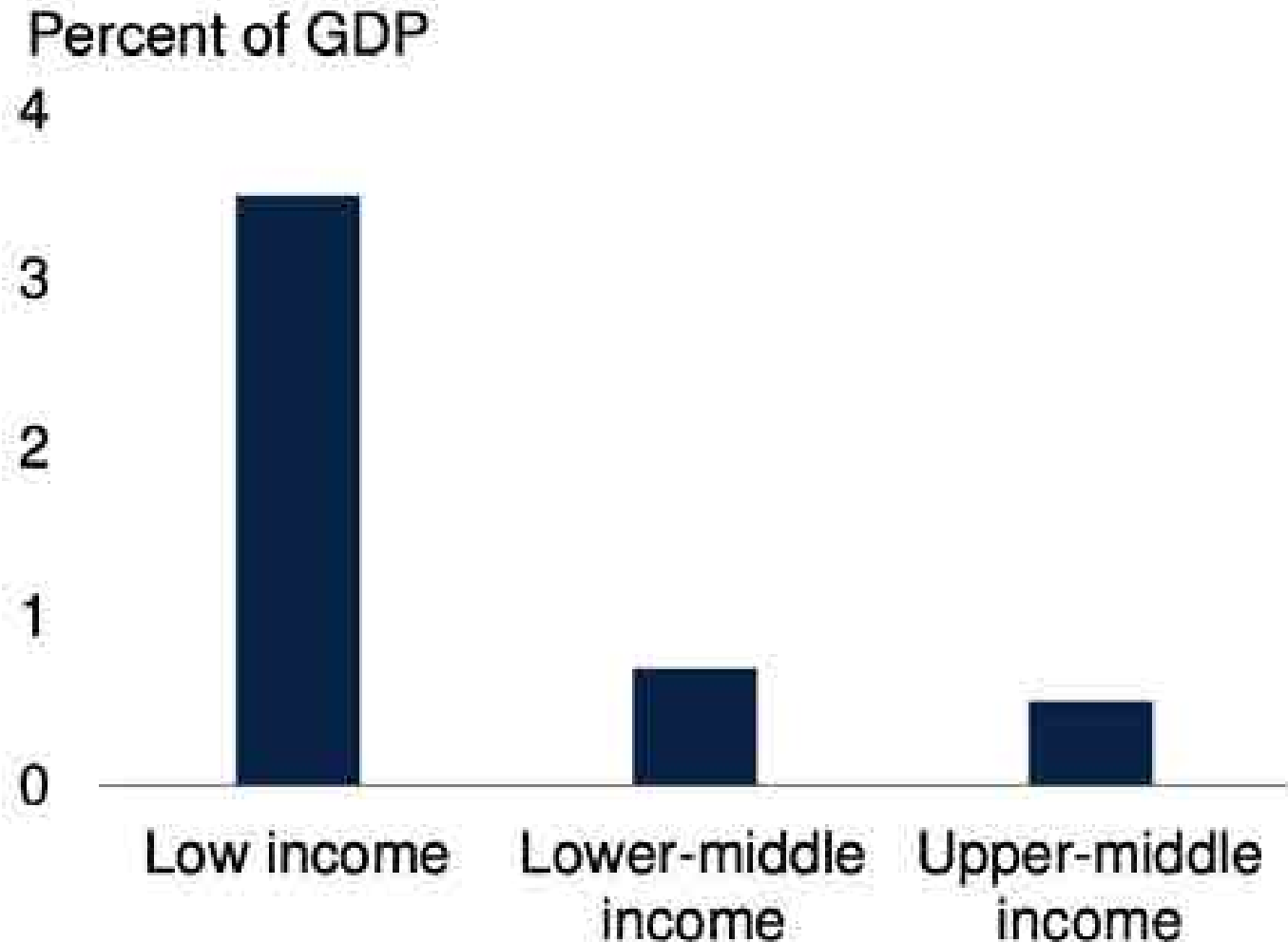
Note: Global surface temperature change relative to period 1850-1900.

**Uncertain scenarios on global warming.**

**An increase of 4 degrees would be catastrophic for the global environment.**

structural challenges that pose risks – prospective balance of payments sta became operational in October 2021 intended to help member countries longer-term challenges—including climate and pandemic preparedness. The re-implemented under the RSF arrange

## D. Annual climate adaptation costs



**Getting  
green isn't  
for the  
poors...**