



# THE **2021** EU INDUSTRIAL R&D INVESTMENT SCOREBOARD

Executive Summary

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# THE **2021** EU INDUSTRIAL R&D INVESTMENT SCOREBOARD

## Foreword by Commissioner Mariya Gabriel

This year's EU Industrial R&D Investment Scoreboard reports on companies' R&D investments in 2020, providing a snapshot of a particularly challenging year when the COVID-19 pandemic hit our societies and economy. The Scoreboard reflects the impact in various industrial sectors.

In the EU and worldwide, businesses in the Health and ICT sectors continued to increase their R&D investments. However, for the first time in 10 years, EU companies decreased their overall R&D investments. This is due mainly to the impact of the pandemic and reduced R&D investments in sectors such as the Automotive, Aerospace & defence industries and their large share in overall EU private R&D investments that year. Despite lowering their R&D investment, EU companies in the Automotive sector still account for the largest share in this sector globally and invest considerably more than their US and Chinese counterparts.

The Scoreboard also shows the strong position of the EU in developing green technology in Energy-Intensive Industries. Top R&D investing companies are increasingly focusing their R&D efforts on technologies that

will contribute to achieving the green transition with EU companies among the leaders. With the ambitious targets of the European Green Deal and the Digital Compass, this is not 'business as usual'. Given the new wave of deep tech innovation, Europe's companies have a critical role by investing in research and innovation.

The industrial competitiveness focus of the EU's research and innovation programme Horizon Europe, including the partnerships, and the swift establishment of national Recovery and Resilience Plans under the NextGenEU programme, show the EU's ambition to reinvigorate our industrial base and offer concrete support. The renewed European Research Area and the forthcoming Innovation Agenda will prompt investments in innovation, starting with the co-creation of transition pathways and ERA industrial technology roadmaps.

This report serves as a 'call to action' for industry to invest in the recovery. We have seen in the past that those who prepared for the future succeeded. I hope that this report inspires many actions for a stronger and competitive industry in Europe.



# EXECUTIVE SUMMARY

**The main objective of the EU Industrial R&D Investment Scoreboard (the *Scoreboard*) is to benchmark the performance of EU innovation-driven industries against major global counterparts and to provide an R&D investment database that companies, investors and policymakers can use to compare individual company performances against the best global competitors in their sectors.**

The 2021 edition of the *Scoreboard* reports on the 2500 companies that invested the largest sums in R&D worldwide in 2020. These companies, with headquarters in 39 countries, and more than 800k subsidiaries all over the world, each invested over €36.5 million in R&D in 2020. The total investment across all 2500 companies was €908.9bn, an amount equivalent to 90% of the world's business-funded R&D.

The top 2500 includes 401 companies based in the EU, accounting for 20% of the total, 779 US companies (38%), 597 Chinese companies (16%), 293 Japanese companies (12%) and 430 from the rest of the world (RoW, 14%). The RoW group comprises companies from the UK (105), Taiwan (86), South Korea (60), Switzerland (57) and companies based in a further 15 countries.

This report analyses companies' R&D investments, patent portfolios and other financial performance indicators over recent years, focusing on the comparative performance of EU companies and their global

counterparts. Moreover, it includes a patent-based analysis showing the positioning of EU companies in green technology for energy intensive industries; and a study exploring the role of the *Scoreboard* companies in achieving the UN's sustainable development goals (SDGs).

In 2020, the pandemic hit global business hard causing a significant drop in companies' sales, profits and capital expenditures. Overall R&D investment was sustained by increases in sectors such as ICT services and Health industries. However, most other sectors decreased R&D investment, particularly the transport-related industries that have been most strongly affected by the lockdown.

The results of this report highlight the challenges and opportunities facing the EU as it seeks to improve its R&D capability and reinvigorate its industrial base, in line with the priorities of the new industrial and innovation EU policy, particularly in the context of the digital and green transitions.

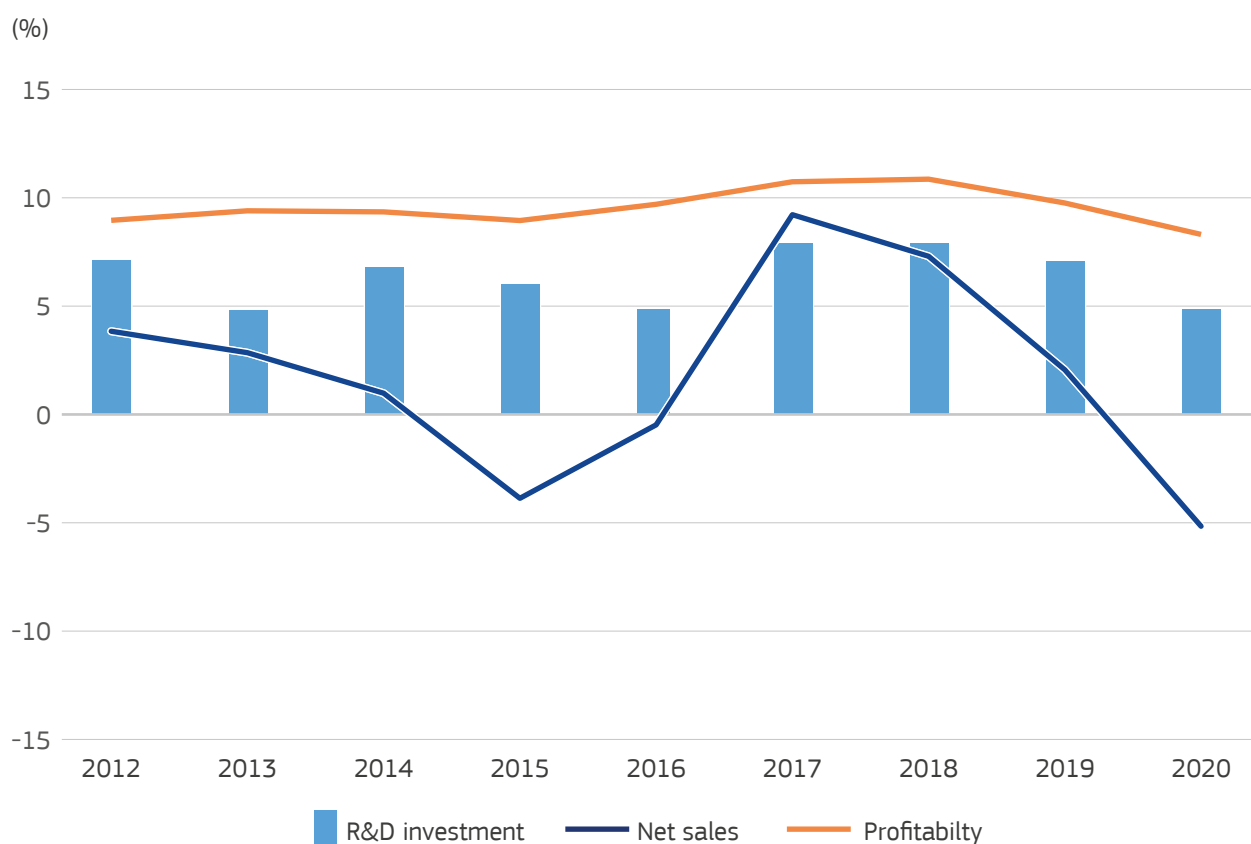
## Key findings

### 1 Global business sustained its R&D investments in 2020 despite being hit hard by the pandemic

Despite the Covid-19 pandemic, global investment in R&D continued to increase significantly in 2020 for the eleventh consecutive year. The 2500 *Scoreboard* companies invested €908.9bn in R&D, 6.0% more than in 2019, an increase which is rather lower than that of the previous year (9.2%). Unlike R&D investment, most other financial indicators were negatively affected by the pandemic, particularly operating profits, net sales

and capital expenditures. This indicates that, overall, the major R&D investing companies decided to protect their R&D investment despite falling sales and profits in order to maintain and develop their competitive position to be able to take advantage of the post-crisis upturn and its associated opportunities. This ongoing increase in R&D investment is in contrast to the overall decrease of 1.9% following the Great Recession in 2008-2009.

**Figure S1:** Global top R&D investing firms trends in R&D growth, net sales growth and profitability 2011-2020



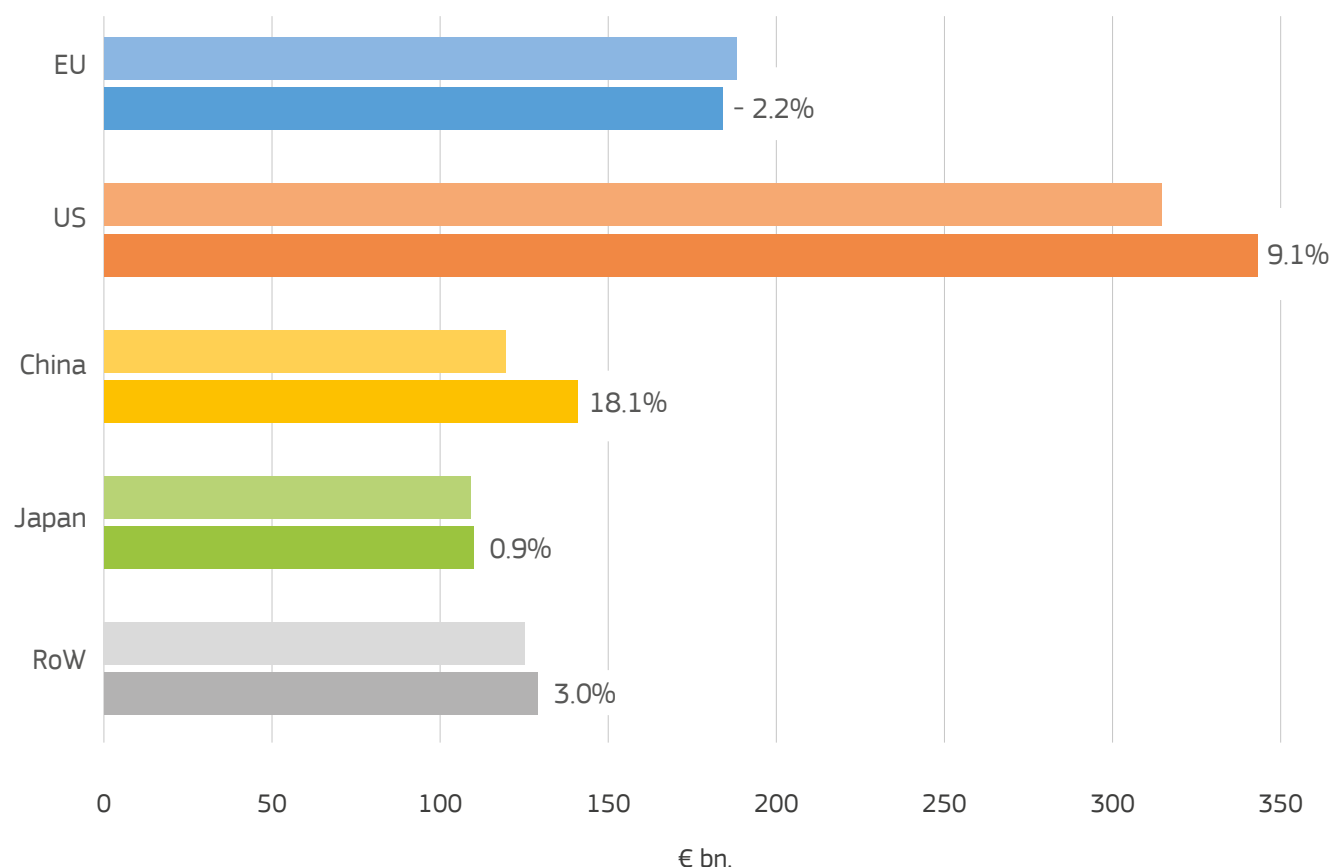
**Note:** Growth rates for the three variables computed on 1771 out of the 2500 companies for which data on R&D, Net Sales and Operating Profits are available for the entire period 2011-2020. These companies represent 87.3% of R&D, 87.6% of Net Sales and 88.7% of Operating Profits of the total sample in 2020.  
**Source:** The 2021 EU Industrial R&D Investment Scoreboard, European Commission, JRC/DG RTD.

Companies based in the US and China showed the largest R&D growth figures (9.1% and 18.1% respectively). This is not surprising since the US has a large proportion of ICT and Health companies that were not affected by the pandemic and China has a particularly large share of ICT companies. In contrast, EU companies R&D investment fell by 2.2% which broke the positive trend observed over the past years (6.0% increase in the prior year). Japanese companies increased R&D

by a modest 0.9% and the RoW group by 3.0%. The performance of the RoW companies was driven by R&D increases from companies mainly based in Taiwan (10.0%) and South Korea (4.2%). See Figures S1 and S2.

The share of global R&D investment for EU and US companies decreased slightly to 20.3% and 37.8% respectively whereas that of the Chinese companies continued to increase significantly, reaching 15.5%.

**Figure S2: R&D investment level and growth rate 2019-2020 by region/country**  
(pale colour=2019; darker colour=2020)



**Note:** Growth rates have been computed for 399 EU, 776 US, 597 Chinese, 292 Japanese, and 427 RoW companies for which data are available for both 2019 and 2020.

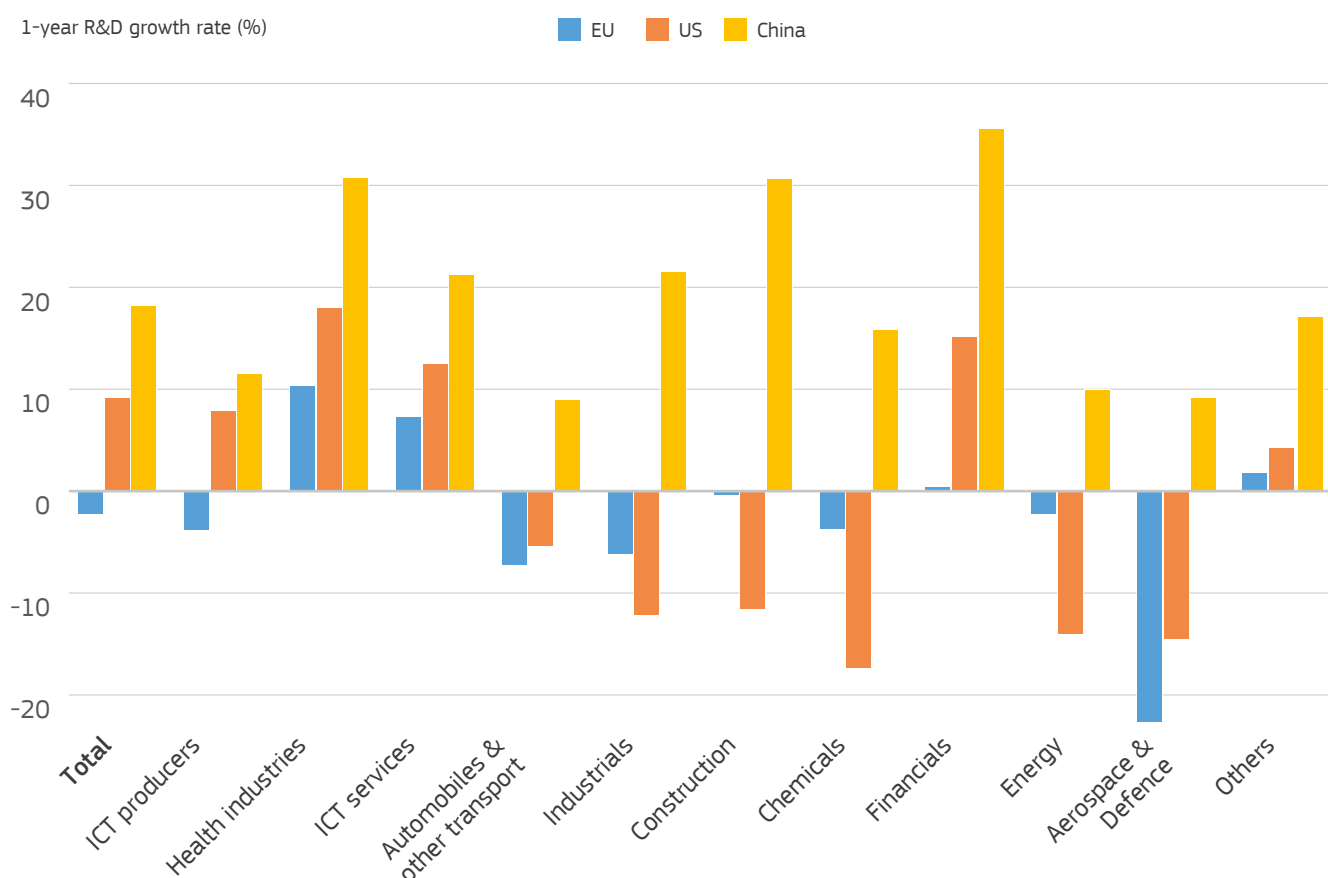
**Source:** The 2021 EU Industrial R&D Investment Scoreboard, European Commission, JRC/DG RTD.

## 2 The effect of the pandemic further boosted the fast-growing ICT services and Health industries while hitting the Automotive<sup>1</sup> and Aerospace & defence sectors hard

Global R&D growth was driven by the ICT services sector (15.5%), followed by the Health and ICT producers sectors (12.8% and 5.7% respectively). Most other sectors showed a decrease in R&D investment, particu-

larly those hit hard by the crisis, i.e. Aerospace & defence (-17.0%) and Automotive (-4.3%). The Chemicals sector reduced R&D by 3.4%, continuing the negative trend observed in the past few years. See Figures S3.

**Figure S3: R&D investment growth 2019-2020 by sector and selected region/country**



**Note:** R&D 2020 growth rates have been computed for 399 EU, 776 US and 597 Chinese companies for which data are available for both years 2019 and 2020. Sectors ordered from left to right in terms of overall R&D investment in 2020.

**Source:** The 2021 EU Industrial R&D Investment Scoreboard, European Commission, JRC/DG RTD.

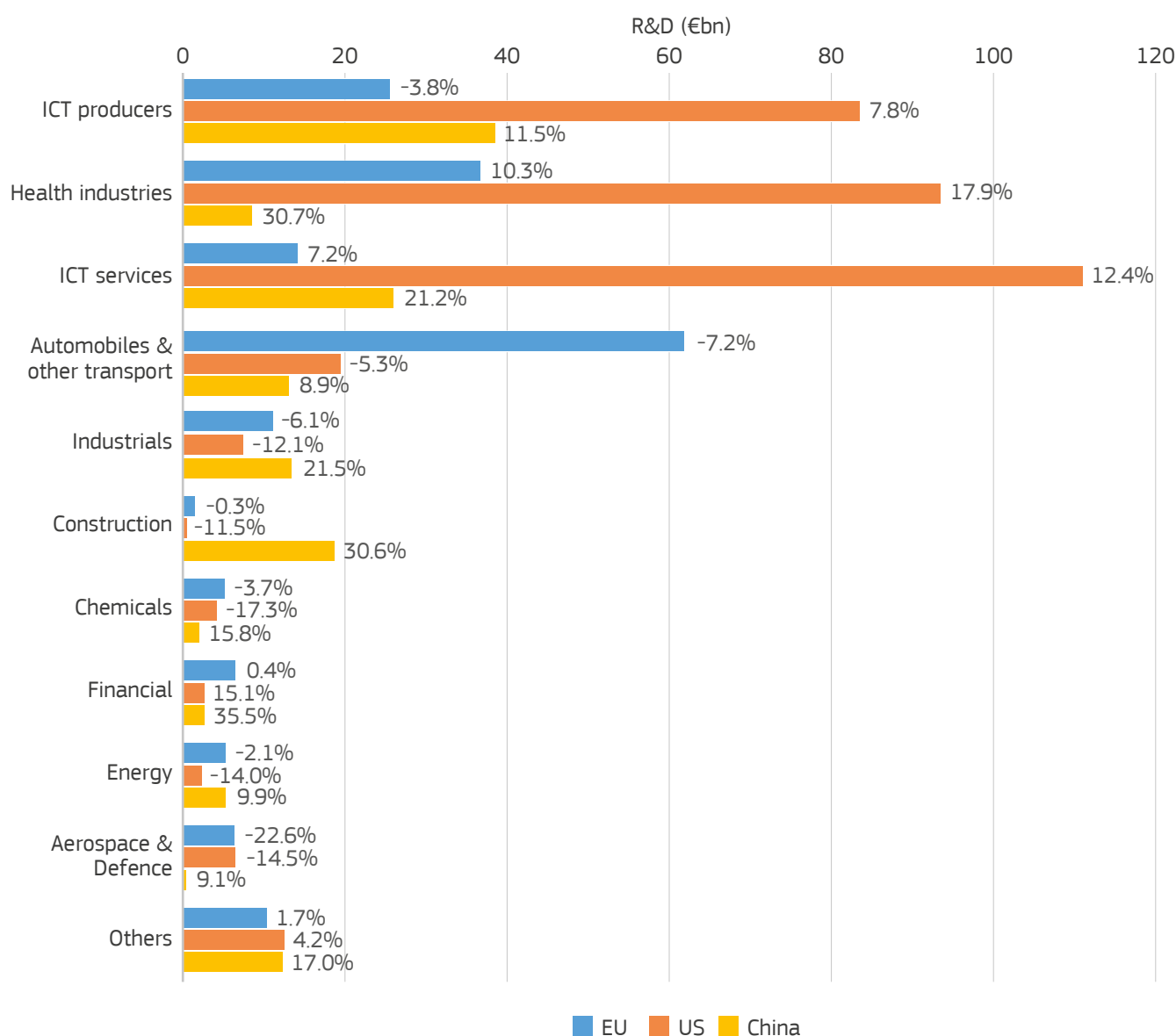
<sup>1</sup> Automotive is a short name for the Automobiles & other transport sector that comprises the Automobiles, Auto parts, Commercial Vehicles & Trucks and Tires subsectors.

### 3 The R&D specialisation of companies held back R&D investment of the EU group

The Automotive sector, the largest R&D sector in the EU accounting for 34% of total EU R&D, held back the overall R&D investment of the EU group since it decreased R&D investment of 7.2%. Most other sectors also experienced reduced R&D investment; these include Aerospace &

defence (-22.6%), Chemicals (-3.7%), Industrials (-6.1%) and ICT producers (-3.8%). Only two sectors showed positive R&D growth in the EU sample; Health (10.3%) and ICT services (7.2%), but the latter sector only accounts for 7.6% of the EU's R&D. See Figures S4 and S5.

**Figure S4: R&D investment in 2020 by region/country and sector group and one-year growth rate**



**Note:** R&D 2020 growth rates have been computed for 399 EU, 776 US and 597 Chinese companies for which data are available for both years 2019 and 2020. Sectors ordered from left to right in terms of overall R&D investment in 2020.

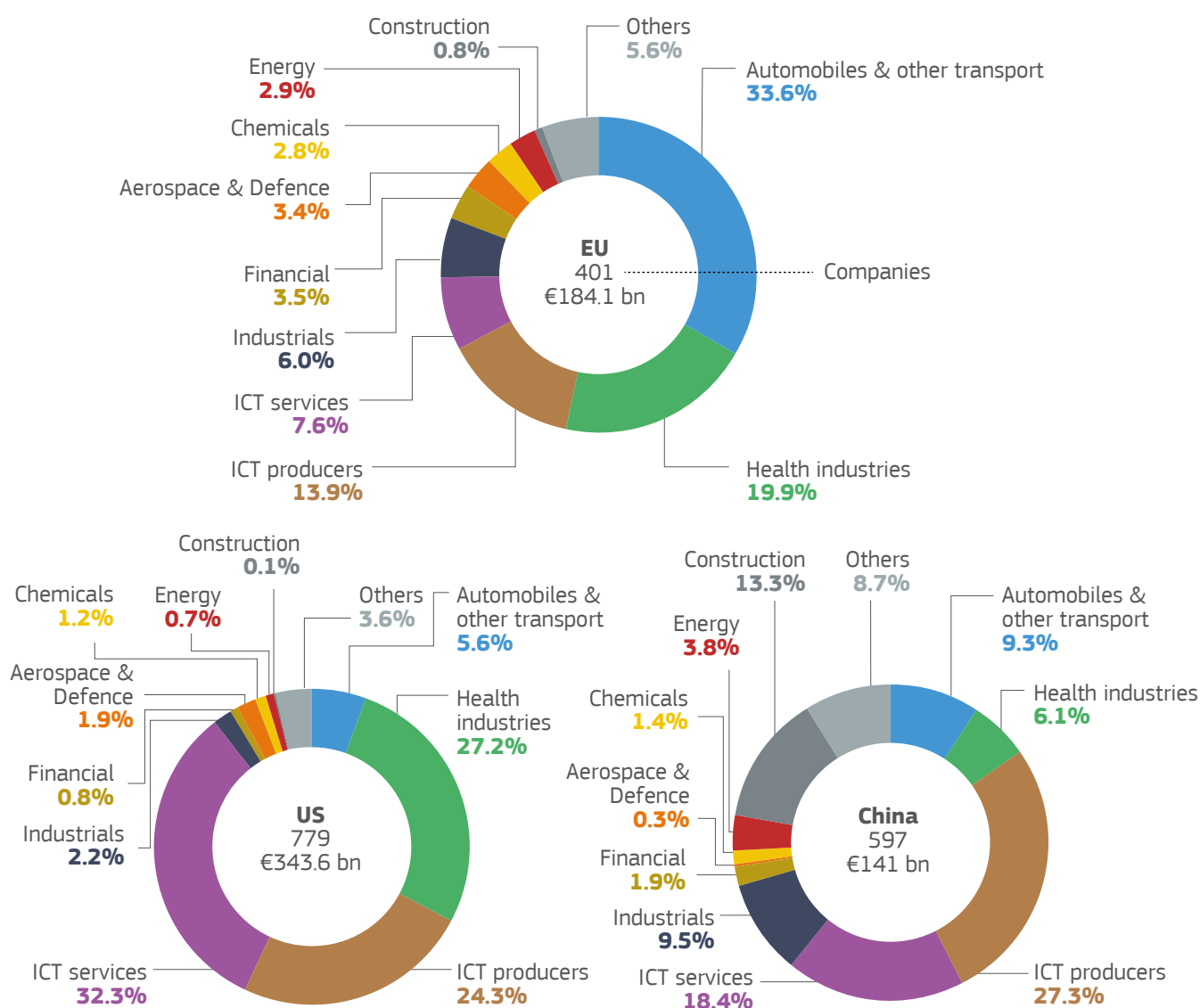
**Source:** The 2021 EU Industrial R&D Investment Scoreboard, European Commission, JRC/DG RTD.



In terms of countries, the largest R&D decreases were shown by companies from France (-8.0%), Italy (-13.7%) and Finland (-9.0%) mostly due to the performance of companies such as RENAULT, PEUGEOT<sup>2</sup>, VALEO, SANOFI, SAFRAN, LEONARDO<sup>3</sup> AND NOKIA. Germany, the largest R&D investor in the EU, showed only a small decrease in R&D (-0.3%) due to the balance between

the strong performance of its Health and ICT companies and the reductions of its Automotive companies. Other countries in the EU whose companies showed positive R&D growth were Denmark (6.0%), Belgium (10.3%) and Austria (12.4%), driven by the good performance of their top R&D investors NOVO NORDISK (DK), UCB (BE) and AMS<sup>4</sup> (AT).

**Figure S5: Share of R&D investment in 2020 by region/country and sector group**



Source: The 2021 EU Industrial R&D Investment Scoreboard, European Commission, JRC/DG RTD.

<sup>2</sup> PEUGEOT merged in 2020 into the STELLANTIS group comprising the Italian-American conglomerate Fiat Chrysler Automobiles.

In 2020, the figures of PEUGEOT were still reported separately.

<sup>3</sup> LEONARDO changed its R&D reporting in 2020, reflecting better the self-funded part of R&D, therefore showing an 'apparent' considerable decrease of R&D respect to previous years.

<sup>4</sup> R&D increase of AMS in 2020 is due to the acquisition of the German company OSRAM whose R&D in the previous year was much higher than the AMS's R&D.

## 4 The ongoing global technology race is reshaping the R&D specialisation patterns of the main world regions

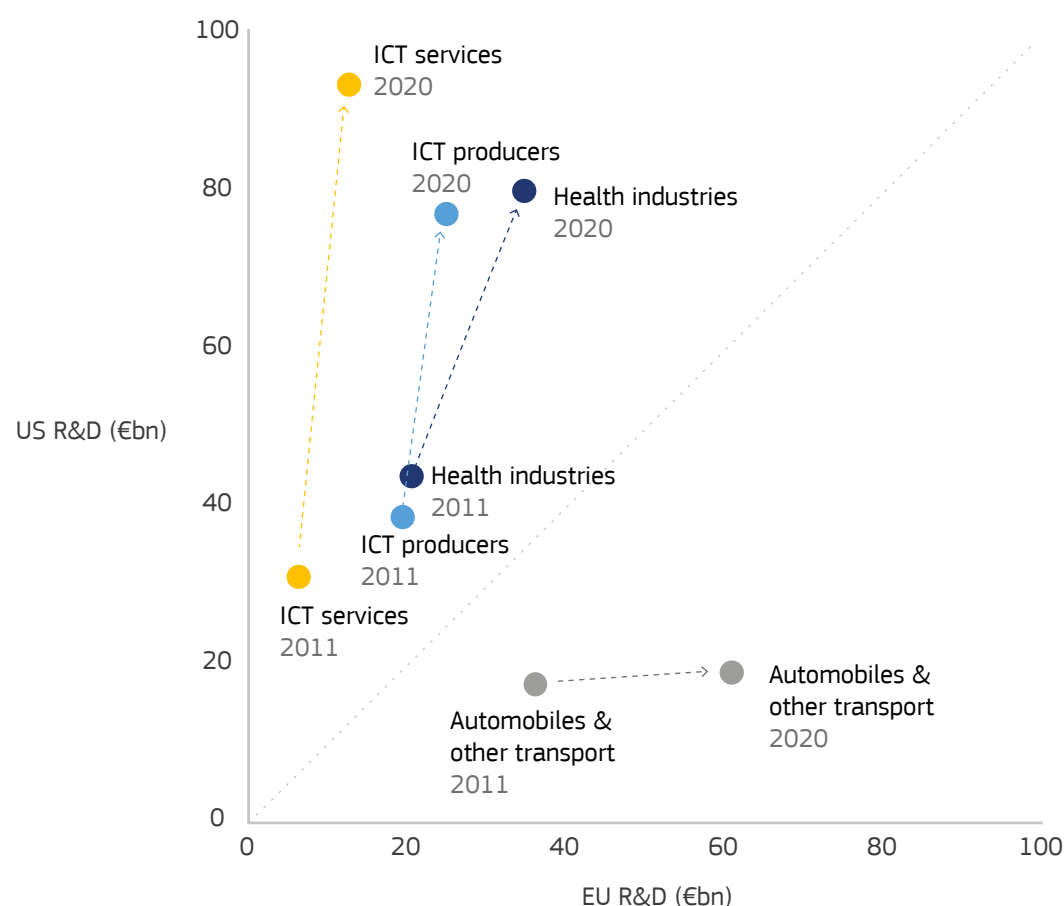
The ongoing technology race intensified over recent years, with US and Chinese companies increasing sharply their R&D investments and EU companies following behind. R&D investment is increasingly concentrated in four major sectors accounting for 77.4% of global R&D in the *Scoreboard*: ICT producers (22.9%), Health industries (20.8%), ICT services (18.6%) and Automotive (15.2%).

Consistent R&D trends over the past 10 years have changed substantially the R&D specialisations of world regions with the EU maintaining a stable sector mix of R&D investment, including a heavy reliance on

the Automotive sector while the US and China have increased their specialisation in ICT sectors with the US also increasing its proportion in Health.

Ten years ago, EU companies were investing in R&D twice as much as their US counterparts in the Automotive sector but half in the Health and ICT producers sectors and 5 times less in the ICT services sector. This sectoral specialisation has sharpened over the last 10 years as in 2020 EU companies invested 3.2 times more than their US counterparts in the Automotive, 2.5 times less in Health, 3.3 times less in ICT producers and 7.9 times less in ICT services. See Figure S6.

**Figure S6:** R&D investment in 2011-2020, comparison of selected sectors in the EU and US



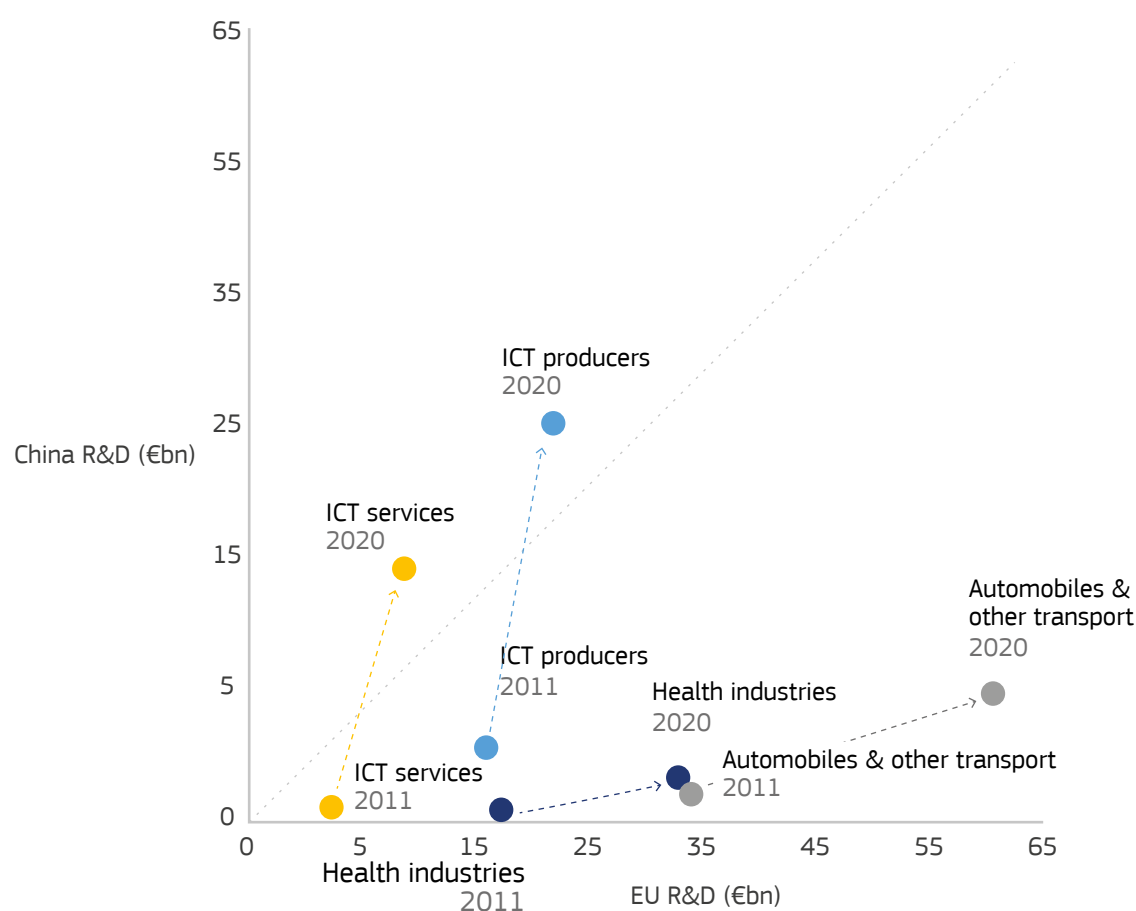
**Note:** Data refers to 504 (EU:154, US:350) of the 813 companies (EU:190, US:623) in the four sector groups in the two regions considered for which R&D data are available for the all period 2011-2020, accounting for 89.7% of the R&D in 2020.

**Source:** The 2021 EU Industrial R&D Investment Scoreboard, European Commission, JRC/DG RTD.

In 2011, the EU invested more than China in all the four major R&D sectors. Since then, R&D investment of Chinese companies operating in ICT sectors has grown considerably with the result that in 2020, Chinese companies invested in R&D almost twice as

much as their EU counterparts in ICT services and 42% more in the ICT producers sectors. By contrast, the EU increased its lead in the other two sectors, reaching a level of R&D investment 5 times larger in Automotive and 4.3 times larger in Health sectors. See Figure S7.

**Figure S7: R&D investment in 2011-2020, comparison of selected sectors in the EU and China**



**Note:** Data refers to 360 (EU:154, CN:206) of the 516 companies (EU:190, CN:327) in the four sector groups in the two regions considered for which R&D data are available for the all period 2011-2020, accounting for 89.0% of the R&D in 2020.

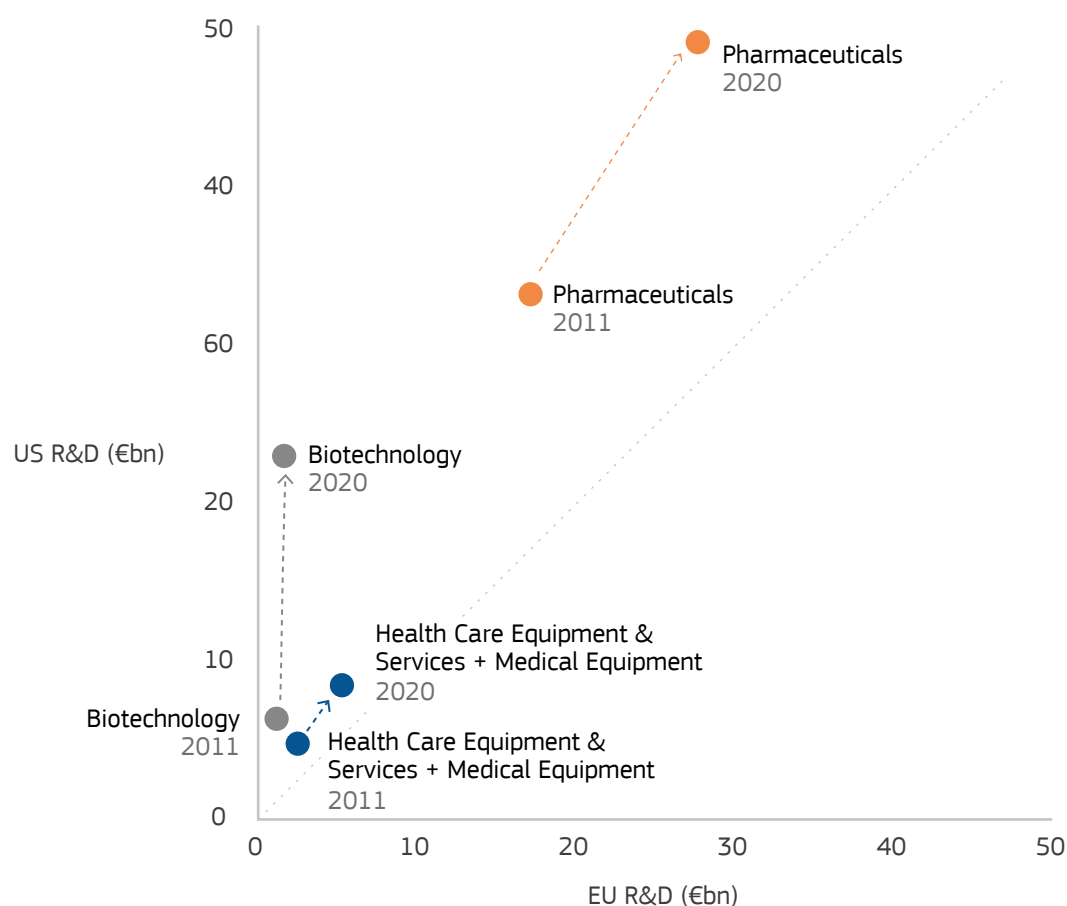
**Source:** THE 2021 EU INDUSTRIAL R&D INVESTMENT SCOREBOARD, EUROPEAN COMMISSION, JRC/DG RTD.

The differences between the EU and its competitors have been analysed in more detail at the subsector level, see in Figure S8 the breakdown of the Health sector for the EU-US sample and in Figure S9 the breakdown of the ICT sector for the EU-China data.

In Health, the main EU-US gap is due to pharmaceuticals and biotechnology subsectors with clear differences between these two subsectors. In pharmaceuti-

cals, EU companies grew R&D at a slightly higher pace than their US counterparts but their overall level of R&D remains well behind that of the US companies (half the US level of R&D investment). In biotechnology, the R&D growth of the US companies was remarkably higher; in 2020 they outperformed their EU counterparts in terms of R&D investment (11 times larger) and number of companies (166 vs 20) and, to a lesser extent, with higher R&D intensity (30.6% vs 26.5%).

**Figure S8: R&D investment in 2011-2020, comparison of the Health sector in the EU and US - details**



**Note:** Data refers to 179 (EU:57, US:122) of the 350 companies (EU:72, US:278) in the Health sector group in the two regions considered for which R&D data are available for the all period 2011-2020, accounting for 87.6% of the R&D in 2020.

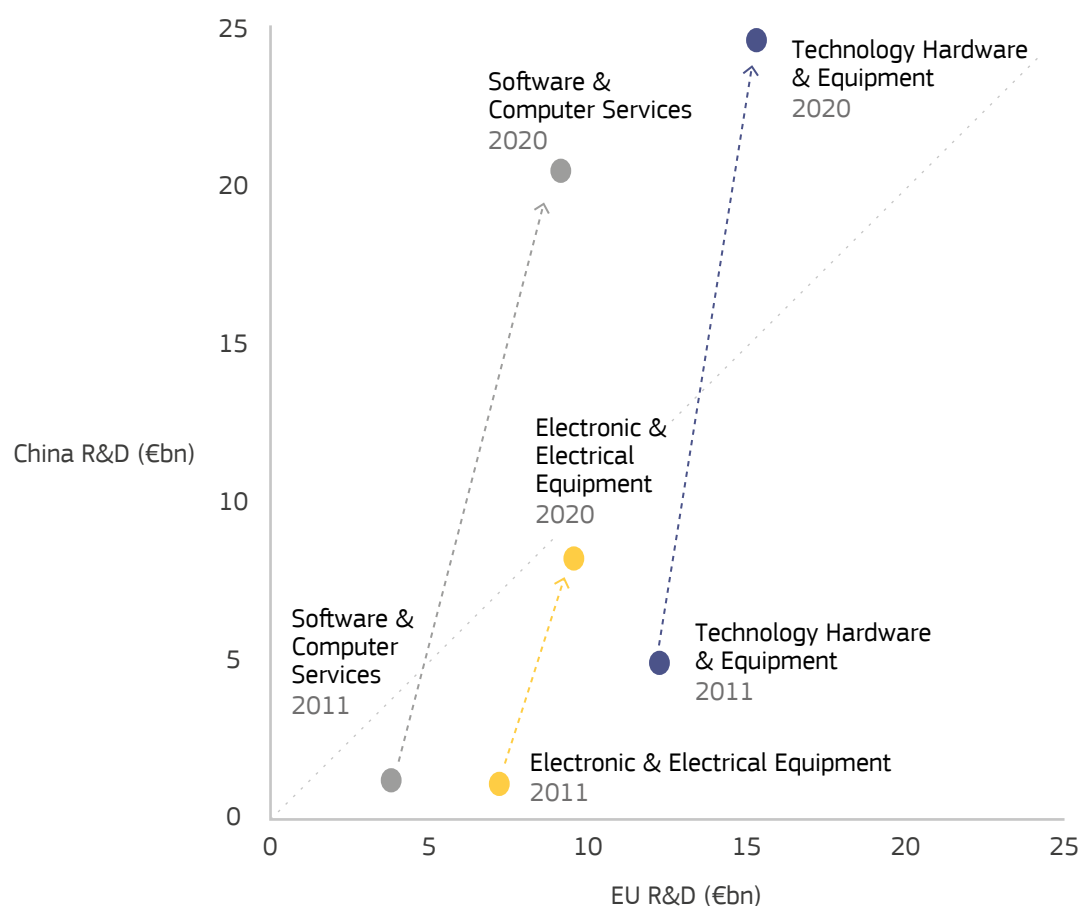
**Source:** The 2021 EU Industrial R&D Investment Scoreboard, European Commission, JRC/DG RTD.

In the ICT sector, the main EU-China differences are in the Software & computer services and Technology hardware & equipment subsectors. Over the past decade, Chinese companies in these subsectors, starting from a low base, overtook the level of R&D investment of their EU counterparts.

These findings reveal important policy challenges for the EU:

- To keep the leadership in the Automotive sector that is facing a double challenge from the required transformation to electric mobility and the increasing integration of digital technology.
- To rebuild a strong Health sector with increasing focus on biotechnology that increasingly underpins the development of new drugs.
- To catch-up in ICT technology, reversing the trends observed over the past decade, to bring the benefits of digital technologies to the whole economy and particularly to exploit their great potential to help solve environmental problems.
- To ensure a strategic autonomy in key technology sectors, keeping in-house critical market segments to guarantee the security of supply and stability of essential supply chains.

**Figure S9: R&D investment in 2011-2020, comparison of the ICT sector in the EU and China - details**



**Note:** Data refers to 196 (EU:60, CN:136) of the 273 companies (EU:73 CN:200) in the ICT services and ICT producers sector groups in the two regions considered for which R&D data are available for the all period 2011-2020, accounting for 88.2% of the R&D in 2020.

**Source:** The 2021 EU Industrial R&D Investment Scoreboard, European Commission, JRC/DG RTD.

## 5 The R&D intensity gap of the EU against its main competitors is largely structural and mostly due to a few high-tech sectors

The difference in industrial structure are also illustrated by the R&D intensity differences between regions. A closer look in terms of structural factors (relative size of sectors) and intrinsic factors (R&D intensity differences within sectors) shows that most of the EU gap against competitors is due to structural factors and that this has both sharpened and been exacerbated by the effects of the pandemic.

Table S1 shows the distribution of the EU-US R&D intensity differences in terms of structural and intrinsic factors for the major sectors by R&D. The figures indicate that the overall EU-US gap is mostly due to

structural factors (-3.05 out of -3.61 percentage points) and due to the Health (-1.18), ICT producers (-1.32) and, more particularly, due to ICT services (-1.67). It also shows the surplus of the EU in both structural and intrinsic terms for the Automotive sector and a smaller surplus for the aggregate of all other sectors.

The implication for EU policy is that dealing with a structural gap calls for specific targeted industrial and innovation policies to increase the number and size of EU companies in high R&D-intensity sectors while recognising that existing individual companies are close to their rivals with regard to R&D intensity levels.

**Table S1: EU-US R&D intensity differences for the main industries broken-down into structural and intrinsic terms in 2020.**

	EU		US		EU-US R&D intensity differences		
	R&D (€million)	R&Dint (%)	R&D (€million)	R&Dint (%)	Structural	Intrinsic	Total
Automobiles & other transport	61794.2	6.0	19406.7	4.4	0.58	0.37	0.96
Health industries	36686.5	12.1	93441.5	12.4	-1.18	-0.02	-1.20
ICT producers	25504.5	9.4	83524.8	9.9	-1.32	-0.03	-1.35
ICT services	14071.4	4.7	111001.5	13.1	-1.67	-0.56	-2.23
Rest of sectors	46044.6	1.8	36188.0	2.4	0.54	-0.34	0.20
<b>Total</b>	<b>184101.4</b>	<b>4.2</b>	<b>343562.4</b>	<b>7.8</b>	<b>-3.05</b>	<b>-0.57</b>	<b>-3.61</b>

Source: The 2021 EU Industrial R&D Investment Scoreboard, European Commission, JRC/DG RTD.

## 6 High-tech companies are taking over more positions in the global R&D ranking and thus replacing companies from traditional sectors

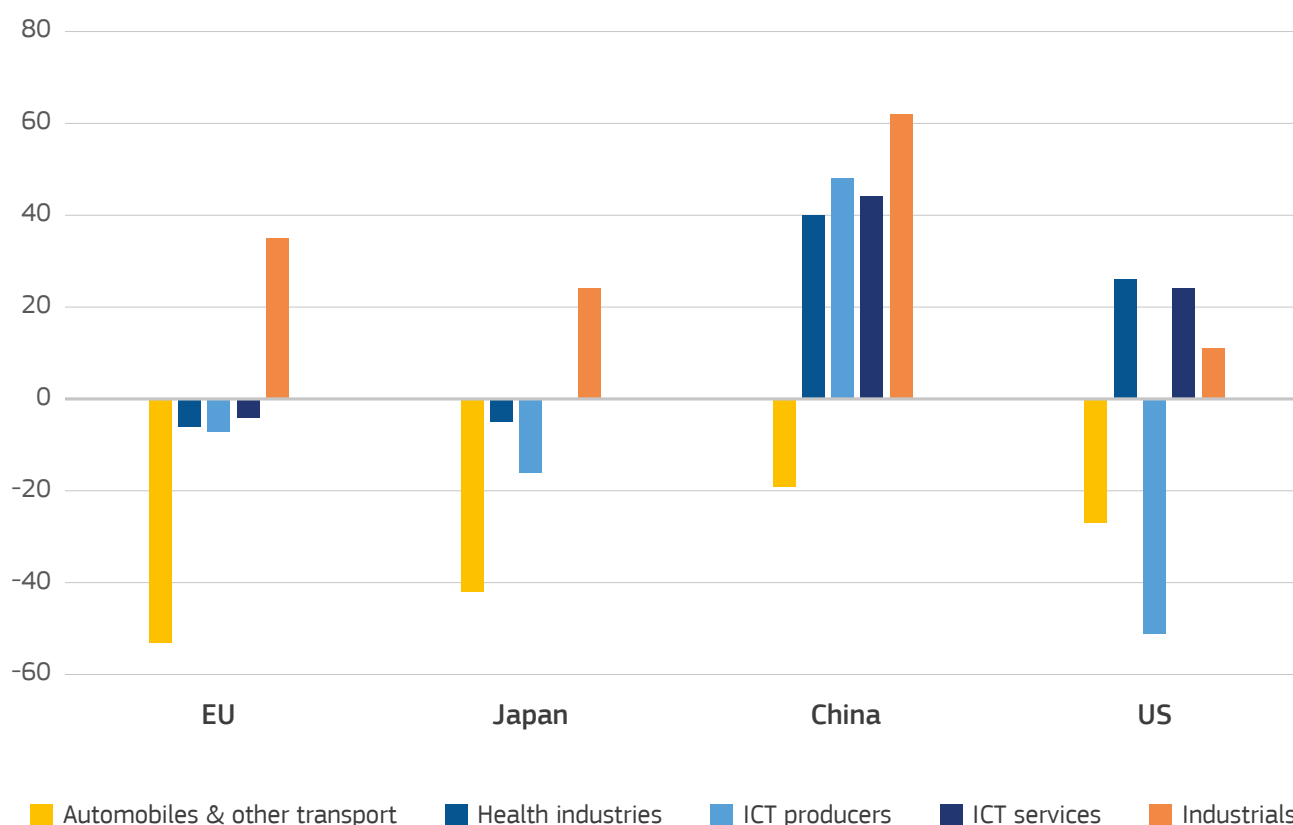
Structural changes are also reflected in the rapidly changing composition of the global R&D ranking. The most important development between the 2016 and 2021 *Scoreboards* in the global R&D ranking is the presence of more high-tech companies and in higher positions. These firms are mainly from China and the US, at the expense of more “traditional” sectors, mainly from the EU and Japan (See Figure S10).

The US presence increased in two of the key sectors, i.e. Health industries and ICT services and decreased

in two. The EU presence in all four key sectors decreased, slightly in ICT and Health, more in Automotive, and increased in a group of low and medium-tech industries such as Industrial metals, Industrial engineering, Industrial transport, Containers & packaging. Chinese firm presence increased in four of the five sectors.

Similar to the EU, Japan’s number of companies increased in medium-tech industrial sectors and decreased in Automotive, ICT producers and Health.

**Figure S10: Main changes of presence (number of companies) of the main geographic regions between the 2016 and 2021 *Scoreboards*.**



Source: The 2021 EU Industrial R&D Investment Scoreboard, European Commission, JRC/DG RTD.

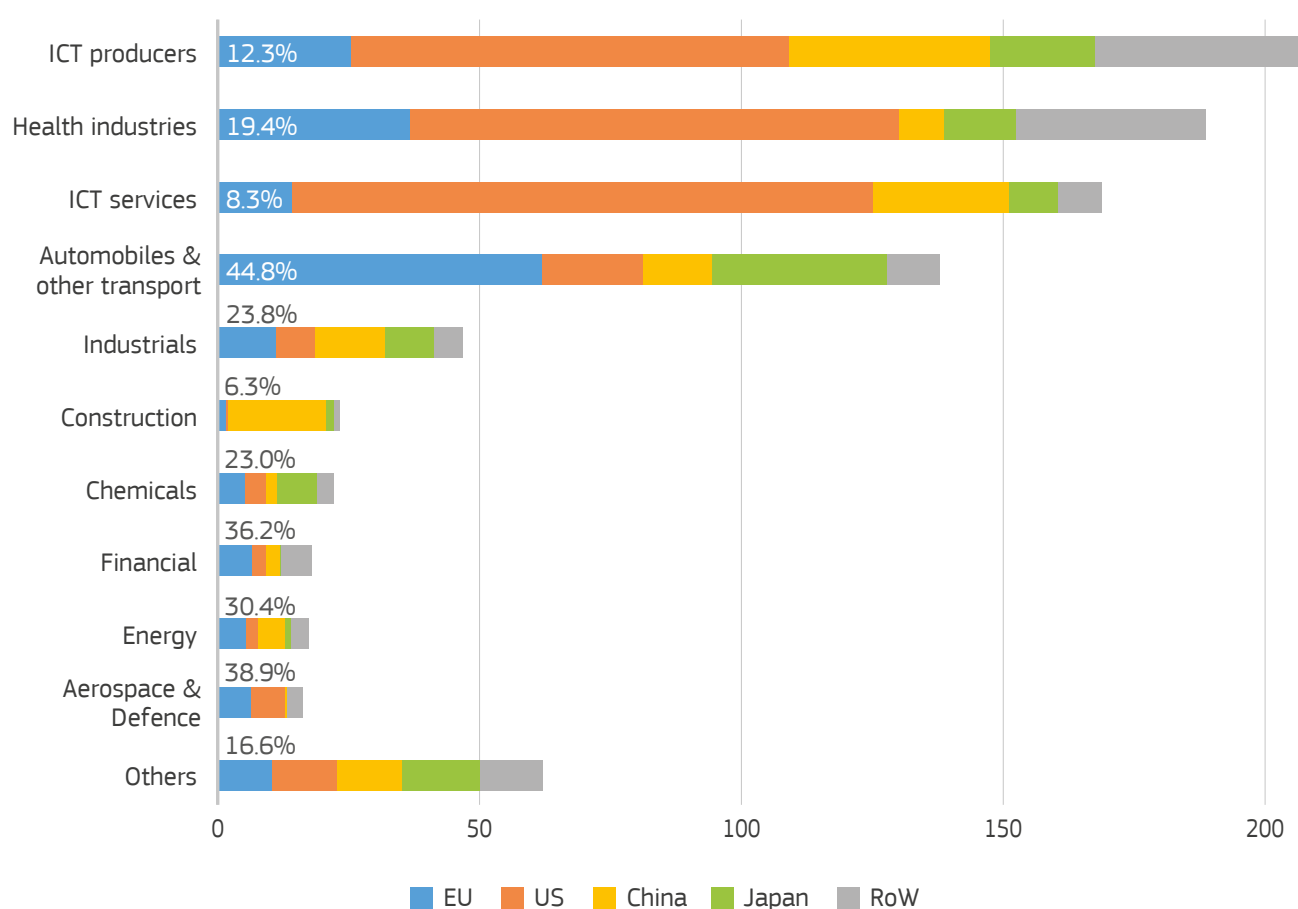
## 7 The actual location of companies' activities reveals EU's opportunities to improve investment attractiveness for key segments of the value chain

The *Scoreboard* shows the strengths of the industrial base of the EU which has a more balanced mix of companies. In terms of specialisation, as shown in Figure S5, the EU sample presents a broader diversification especially compared to the US whose R&D investment is concentrated in a few high-tech sectors. In terms of share of global R&D, as shown in Figure S11, EU companies also have a significant weight in key industrial sectors, e.g. Automotive, Aerospace & defence and Chemicals sectors and compared with

the Chinese sample, the EU group has 30% more overall R&D investment.

In addition, the ownership structure of the *Scoreboard* shows a broader worldwide distribution of EU companies and their subsidiaries. For example, out of 201 countries where the *Scoreboard's* parent companies have subsidiaries, the EU has at least one company in 195 countries compared with 176 for the US, 149 for Japan and 142 for China.

**Figure S11: Share of R&D investment in the global R&D ranking for main sectors and regions**



**Note:** Percentages reported represent the shares of EU companies R&D in each sector.

**Source:** The 2021 EU Industrial R&D Investment Scoreboard, European Commission, JRC/DG RTD.



Moreover, the analysis of the inventor location of the patents of *Scoreboard* companies shows that EU companies are more likely than their counterparts to source R&D inputs from abroad. Table S2 presents, for the overall sample and for four major R&D sectors, the share of patents whose inventors are located in the company's headquarter region and the shares of patents located in other regions (obtained through their subsidiaries, foreign affiliates or partnerships). These data show a higher patenting activity abroad of the EU companies, 27.5% of their patents have inventors located abroad compared with

18% for the US and 12.1% for China. Similar patterns are observed for the Health and ICT sectors but Automotive, where the EU is world leader, shows a balance between high patent activity of EU companies at home and high patent activity in the EU by foreign controlled companies.

These results indicate the potential opportunity for the EU to improve its R&D capability and reinvigorate its industrial base, in line with the priorities of the new industrial and innovation EU policy, particularly in the context of the digital and green transitions.

**Table S2:** Distribution of companies' patents according to the location of inventors: share of patents within the headquarter region (orange) and shares located in other regions

### Overall sample (all sectors)

		Inventor Location				
		EU	US	China	Japan	RoW
<b>HQ</b>	<b>EU</b>	<b>72.5%</b>	17.7%	1.1%	1.2%	7.5%
	<b>US</b>	5.6%	<b>82.0%</b>	1.7%	0.5%	10.1%
	<b>China</b>	3.5%	5.8%	<b>87.8%</b>	0.3%	2.5%
	<b>Japan</b>	3.0%	14.2%	0.9%	<b>77.1%</b>	4.7%

### Sector's detail

Health Sector		Inventor Location				
		EU	US	China	Japan	RoW
<b>HQ</b>	<b>EU</b>	<b>56.0%</b>	32.2%	0.4%	0.7%	10.7%
	<b>US</b>	6.1%	<b>83.6%</b>	2.1%	0.2%	8.0%
	<b>China</b>	4.3%	7.4%	<b>84.3%</b>	0.1%	4.0%
	<b>Japan</b>	5.4%	34.8%	0.4%	<b>46.6%</b>	12.9%

ICT producers		Inventor Location				
		EU	US	China	Japan	RoW
HQ	EU	67.3%	19.0%	3.2%	0.4%	10.1%
	US	7.0%	75.5%	2.8%	1.2%	13.6%
	China	3.6%	9.0%	82.4%	0.6%	4.5%
	Japan	2.9%	8.5%	0.8%	86.4%	1.4%

ICT services		Inventor Location				
		EU	US	China	Japan	RoW
HQ	EU	72.8%	13.0%	1.8%	0.0%	12.4%
	US	2.6%	86.3%	0.8%	0.3%	10.0%
	China	0.0%	4.2%	95.4%	0.0%	0.4%
	Japan	3.0%	25.3%	6.2%	55.8%	9.7%

Automobiles & other transport		Inventor Location				
		EU	US	China	Japan	RoW
HQ	EU	79.0%	14.1%	0.7%	2.1%	4.1%
	US	12.0%	78.2%	1.2%	0.4%	8.2%
	China	11.0%	6.1%	82.0%	0.5%	0.3%
	Japan	1.9%	14.2%	0.0%	79.7%	4.2%

Source: The 2021 EU Industrial R&D Investment Scoreboard, European Commission, JRC/DG RTD.

## 8 A patent analysis reveals the positioning of the EU in green technology for energy intensive industries

The report includes a patent analysis on green inventions<sup>5</sup> addressing the production or processing of goods for eight Energy Intensive Industries (EII), Cement, Ceramics, Chemicals, Fertiliser, Glass, Lime, Oil-Refining and Steel over 2010-2018.

The results show a steady growth of green patents over the considered period with the EU showing the highest specialisation index (amount of green patents as a share of total patents within the region's portfolio).

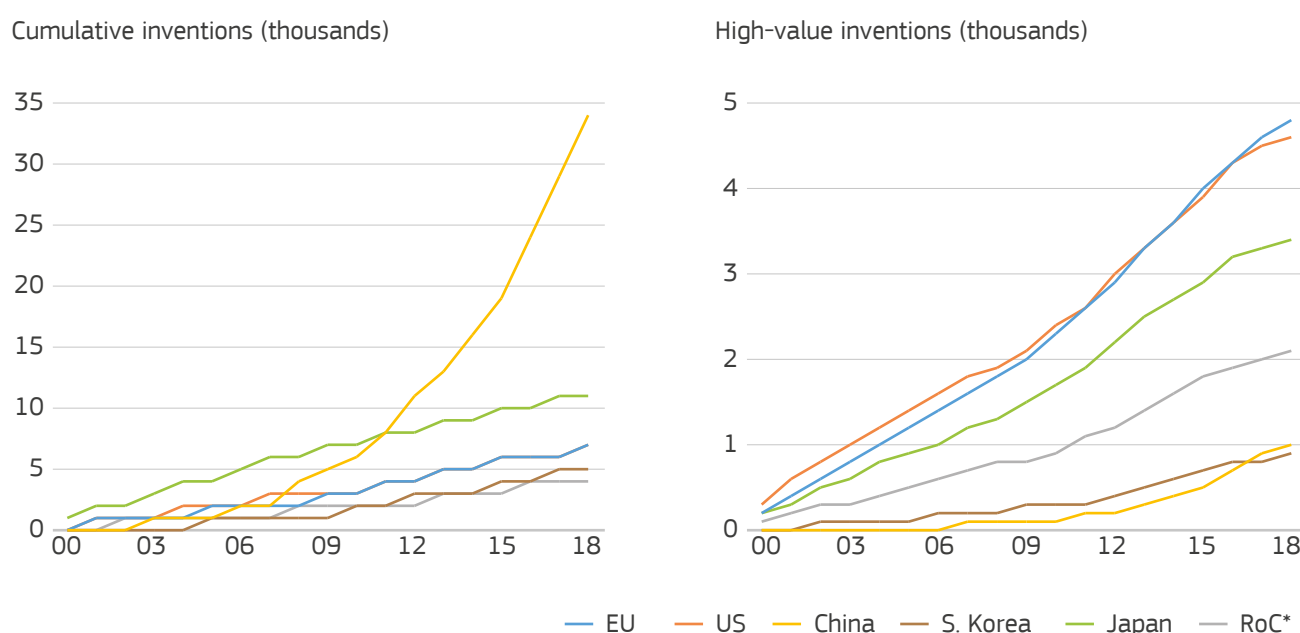
The group of EU companies is runner-up in the race to develop green technology from several perspectives. In terms of share of high-value patents<sup>6</sup> (57%) close behind the US (58%), regarding the share of number of inventions protected internationally (23%) behind the

US (33%) and as to the share of EEL inventions relevant for the production or processing of goods (35%) close behind the US (37%).

Regarding the green patents relevant for the specific EII, the EU shows specialisation for Oil-Refining and Lime and has the second highest share of green invention within its portfolio for Oil-Refining and Steel. The Chemicals sector accounts for 38% of green inventions in EII in the EU. Japanese *Scoreboard* companies lead the inventive activity in green inventions for the Cement industry and are very prominent in the glass sector. Chinese and South Korean *Scoreboard* companies top the list in Ceramics and Chemicals. EU *Scoreboard* companies lead the global ranking in Fertilisers and Lime industries. See Figure S12.

**Figure S12: Trends in energy intensive industry inventions**

Cumulative inventions (left), high-value inventions (right), and share of high-value, granted and international inventions (next page) for major economies in the period of 2010-2018.



Source: The 2021 EU Industrial R&D Investment Scoreboard, European Commission, JRC/DG RTD.

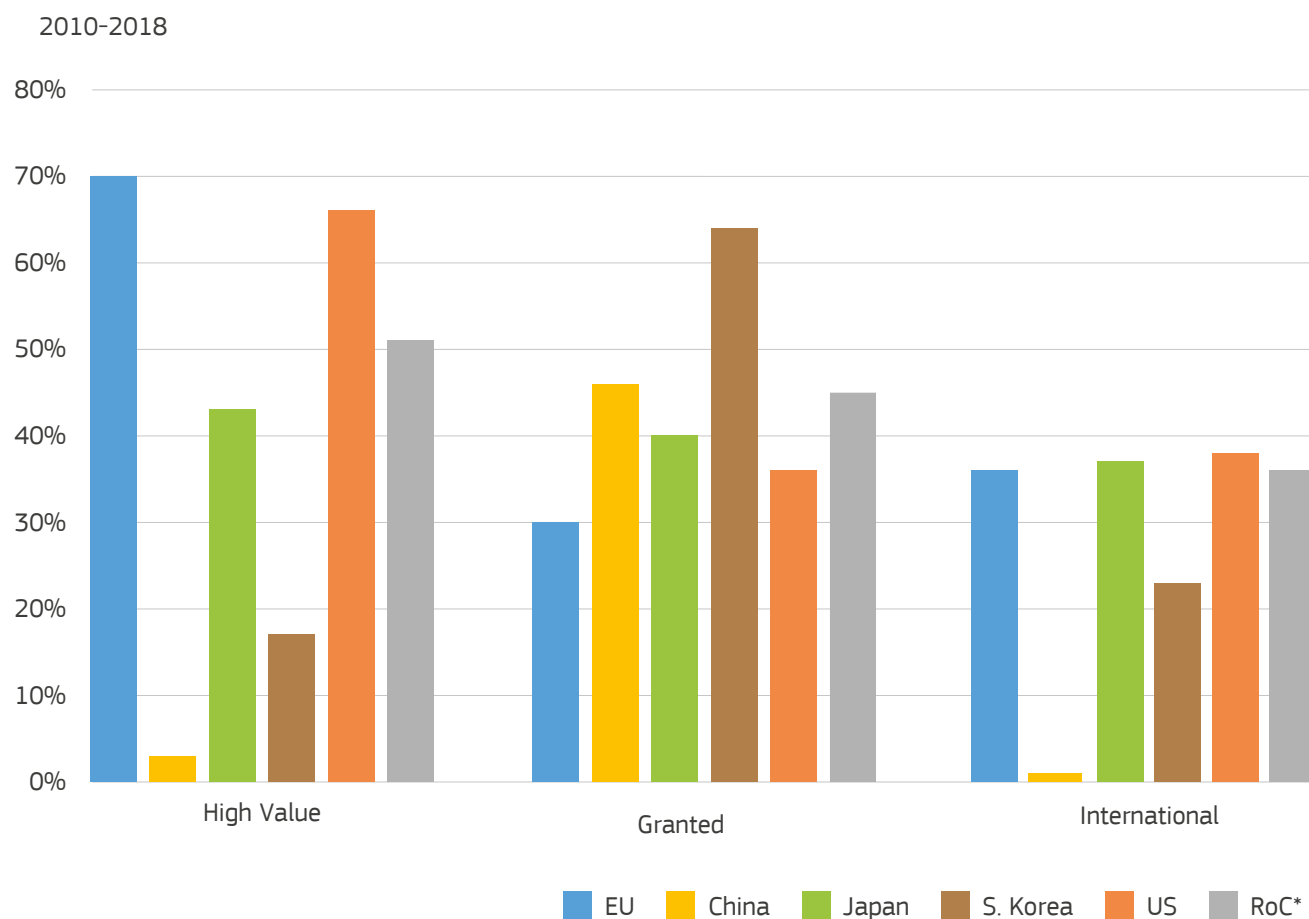
\*Note: RoC means "Rest of Countries"

<sup>5</sup> According to the definition of the Cooperative Patent Classification (CPC), Y02 patent classes regarding climate change mitigation technologies. EPO/USPTO partnership.

<sup>6</sup> It is considered high-value invention when it contains patent applications in more than one office.



## Share of high-value, granted and international inventions



Source: The 2021 EU Industrial R&D Investment Scoreboard, European Commission, JRC/DG RTD.

\*Note: RoC means "Rest of Countries"

## 9 Top R&D investors are increasingly improving their practices on the pathway to achieve UN's sustainable development goals (SDGs)

The report includes a follow-up of the analysis presented in the 2020 *Scoreboard*, aimed at investigating the sustainability behaviour of the top R&D investors, based on extended and updated coverage and deeper analysis on companies' key performance indicators.

The SDGs practices of the top R&D investors have improved over the period 2016-2020, with EU

companies having a comparative advantage in the Energy and Chemicals sectors. There is also a clear association between attention to SDGs and R&D investment for top R&D investors in Energy intensive industries, particularly with respect to SDG 7 (affordable and clean energy), SDG 8 (decent work and economic growth) and SDG 15 (life on land). See Figure S13.

**Figure S13: Scores for selected SDGs for EU and non-EU companies**

	EU (Environmental)			Non-EU (Environmental)		
	Chemicals	Energy	Other sectors	Chemicals	Energy	Other sectors
SDG #6: Clean water & sanitation	59	55	48	57	52	45
SDG #7: Affordable & clean energy	72	76	59	62	63	50
SDG #12: Responsible consumption & production	61	58	51	58	52	46
SDG #13: Climate action	61	63	52	54	57	45
SDG #14: Life below water	53	50	46	55	48	43
SDG #15: Life on land	62	57	57	58	53	51

	EU (Socio-economic)			Non-EU (Socio-economic)		
	Chemicals	Energy	Other sectors	Chemicals	Energy	Other sectors
SDG #3: Good health & well-being	54	54	50	53	50	45
SDG #5: Gender equality	57	58	56	49	51	49
SDG #8: Decent work & economic growth	66	65	62	62	60	56
SDG #9: Industry, innovation & infrastructure	61	58	51	56	51	46

Source: The 2021 EU Industrial R&D Investment Scoreboard, European Commission, JRC/DG RTD.

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