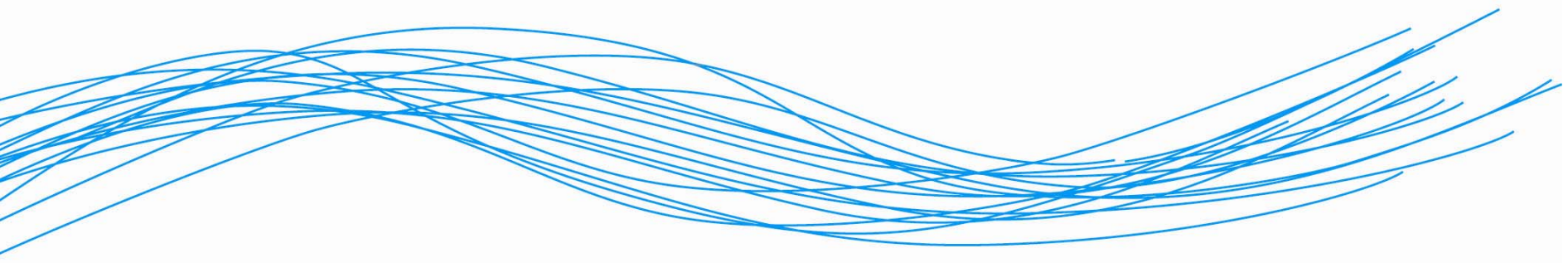


# The EU industrial R&D investment SCOREBOARD



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# 1. Background (1)

## *The EU industrial R&D investment SCOREBOARD*

**Part of Commission activities aiming to improve the understanding of the dynamics of industrial R&D:**

- **Research Investment Action Plan - COM (2003)266**
- **Lisbon Strategy**
- **Barcelona target: R&D = 3% of GDP (BERD = 2%)**
- **Analytical tool for benchmarking and policy analyses**
- **Issued yearly since 2004**

# 1. Background (2)

## *Scoreboard main characteristics*

### **Top R&D investors**

**1000 EU and 1000 non-EU; €402.2 bn (~85% of world BERD)**

*(focus on world 1400 comparable companies)*

### **Nominal data**

**R&D and financial indicators from latest available companies' accounts (4 years)**

### **Scoreboard vs BERD**

**Different/complementary perspective: Company vs territorial**

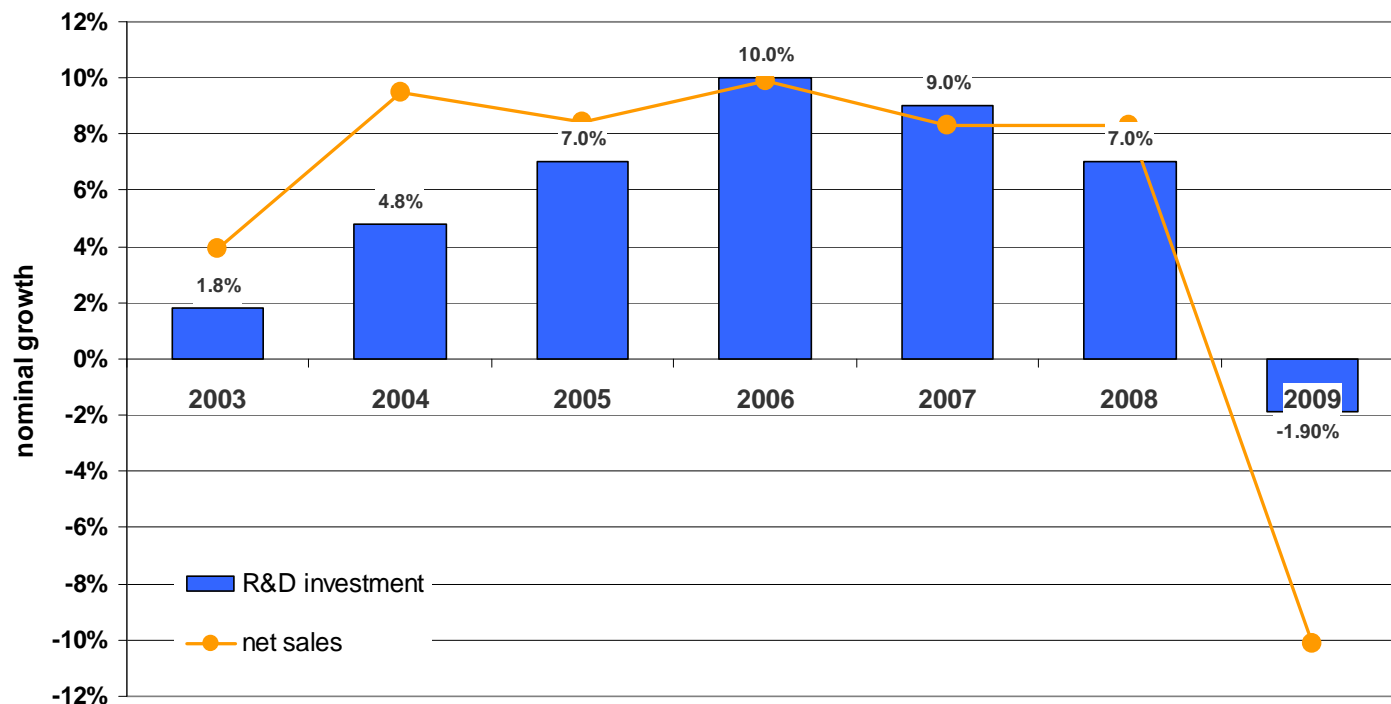
### **Main limitation**

**Undisclosed location of the R&D investment and technological profile**

## **2. Overall R&D trends**

## 2. Overall R&D trends (1)

One-year R&D investment and net sales growth of the *Scoreboard* companies.

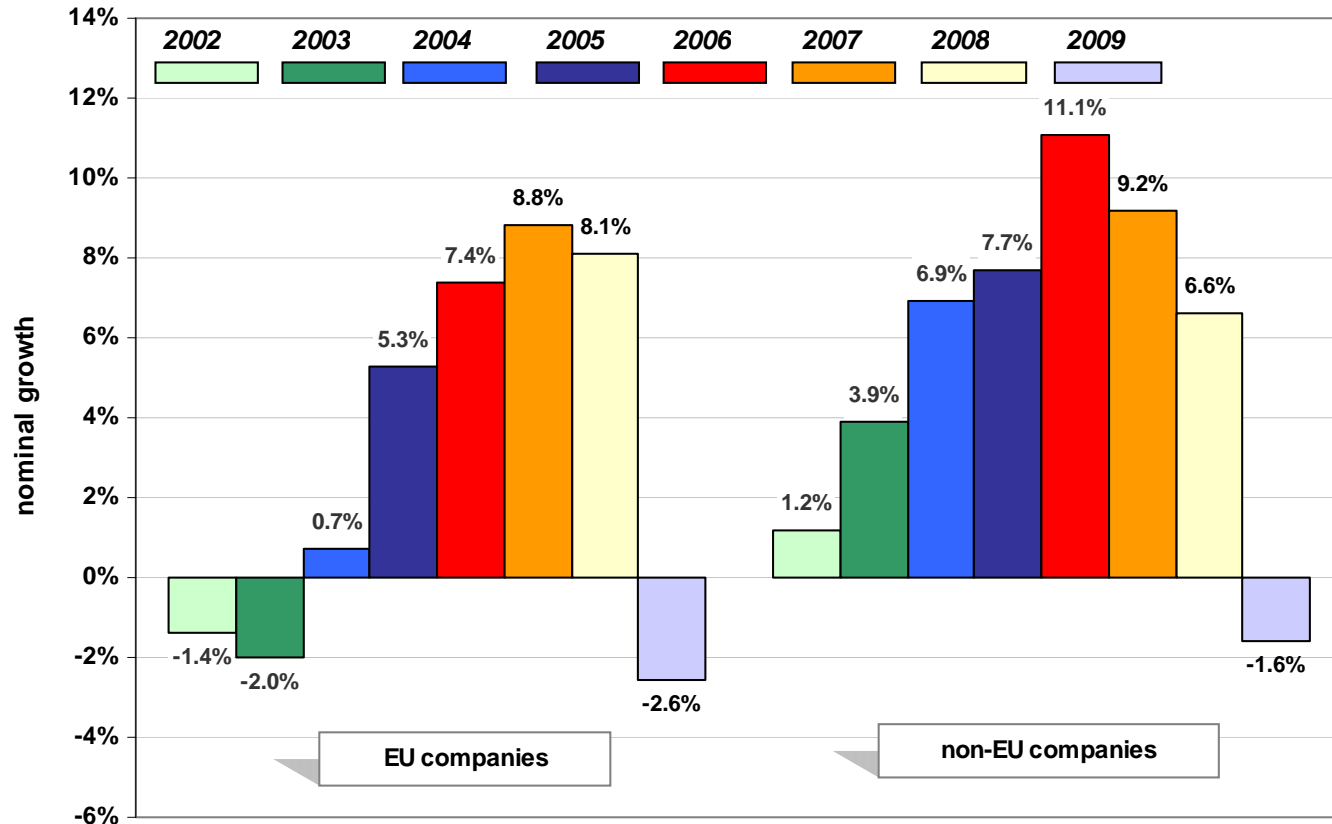


Note: The different *Scoreboards* are not directly comparable because changes in the sample composition.

Source: *The EU Industrial R&D Investment Scoreboards (of 2004, 2005, 2006, 2007, 2008, 2009, 2010)*  
European Commission, JRC/DG RTD.

Worldwide, R&D investment did better than net sales ...

## 2. Overall R&D trends (2)



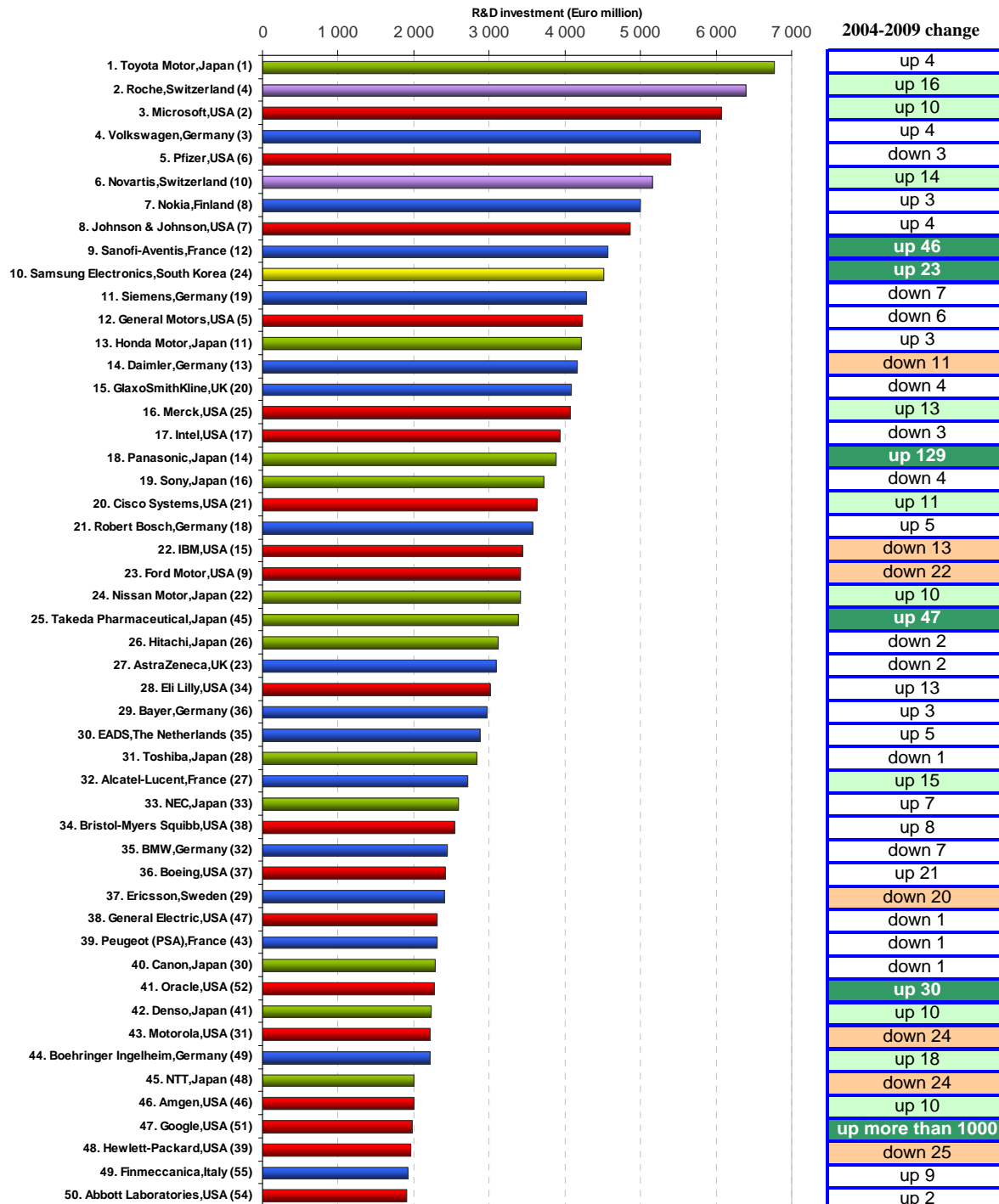
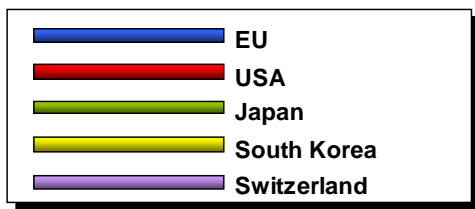
Source: *The EU Industrial R&D Investment Scoreboards, EC, JRC/DG RTD.*

**but, R&D may have not yet reached the bottom.**

## **3. Top R&D companies**

### 3. Top R&D companies (1)

Source: The 2010 EU Industrial R&D Investment Scoreboard, EC, JRC/DG RTD, ranks in previous years in brackets



### 3. Top R&D companies (2)

A sample of counterpart companies in the EU and the US

EU Company	R&D Intensity %		US Counterpart
GlaxoSmith-Kline	12.8	<b>15.5</b>	<b>Pfizer</b>
<b>SAP</b>	<b>14.5</b>	12.1	Oracle
Nokia	12.2	<b>14.4</b>	<b>Motorola</b>
<b>Robert Bosch</b>	<b>9.4</b>	8.8	Delphi
AKZO-Nobel	2.3	<b>5.3</b>	<b>DuPont</b>
<b>EADS</b>	<b>6.7</b>	5.1	Boeing
<b>Volkswagen</b>	<b>5.7</b>	4.1	Ford
<b>Michelin</b>	<b>3.4</b>	2.1	Goodyear
Unilever	2.2	<b>2.6</b>	<b>Procter &amp; Gamble</b>
Electrolux	1.8	<b>2.7</b>	<b>Whirlpool</b>
Saint Gobain	1.0	<b>1.3</b>	<b>Owens Corning</b>
<b>Royal Dutch Shell</b>	<b>0.4</b>	0.3	Exxon Mobil

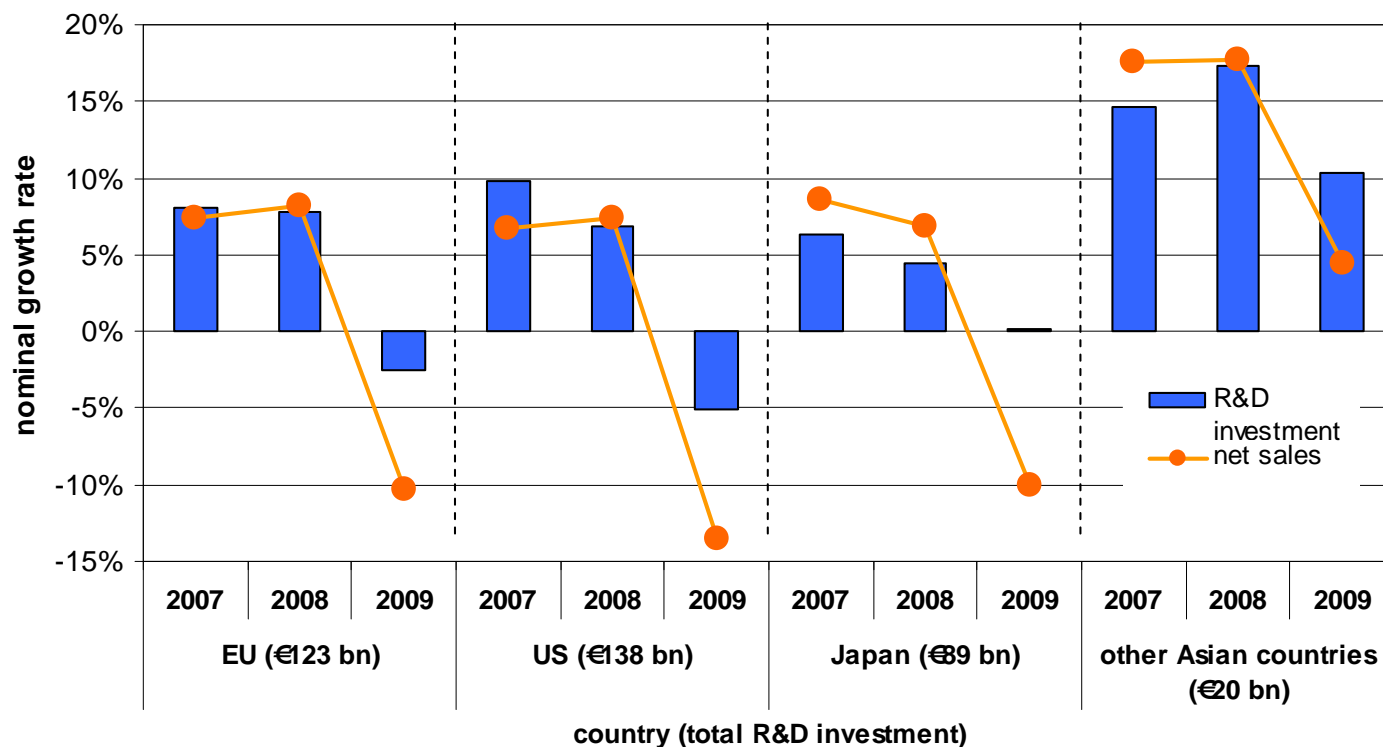
Note: For each pair, the company with the higher RTD intensity is printed in bold red.  
 Source: The 2010 EU Industrial R&D Investment Scoreboard  
 DG JRC / DG RTD, European Commission

Individually, EU companies appear generally as R&D intensive as their US counterparts

## **4. R&D investment by region**

## 4. R&D investment by region (1)

Growth of R&D investment and net sales in the Scoreboard.



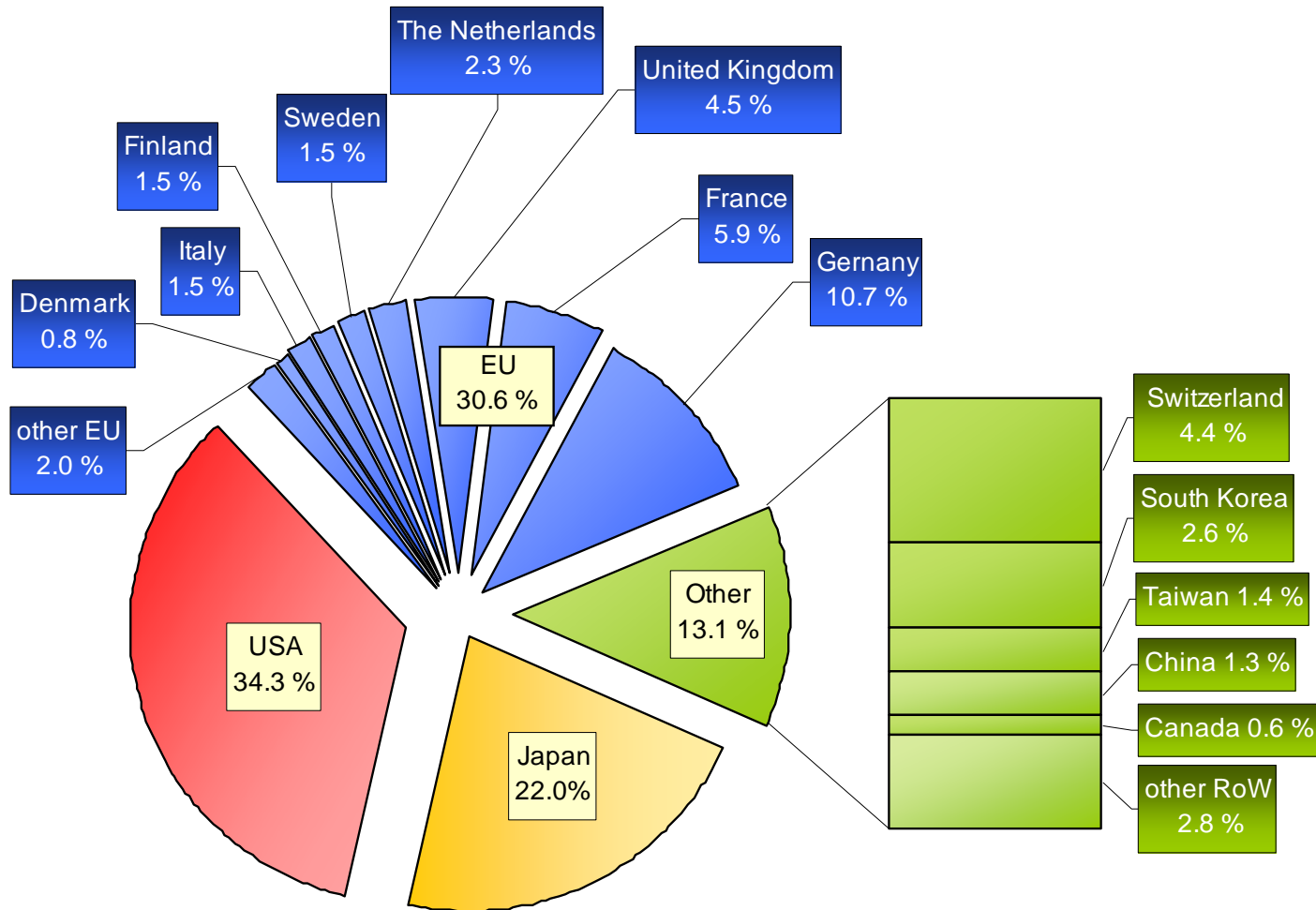
Other Asian countries include South Korea, Taiwan, China, India and Hong Kong.

Source: The 2010 EU Industrial R&D Investment Scoreboard

European Commission, JRC/DG RTD.

Overall figures mask significant differences by region

## 4. R&D investment by region (2)



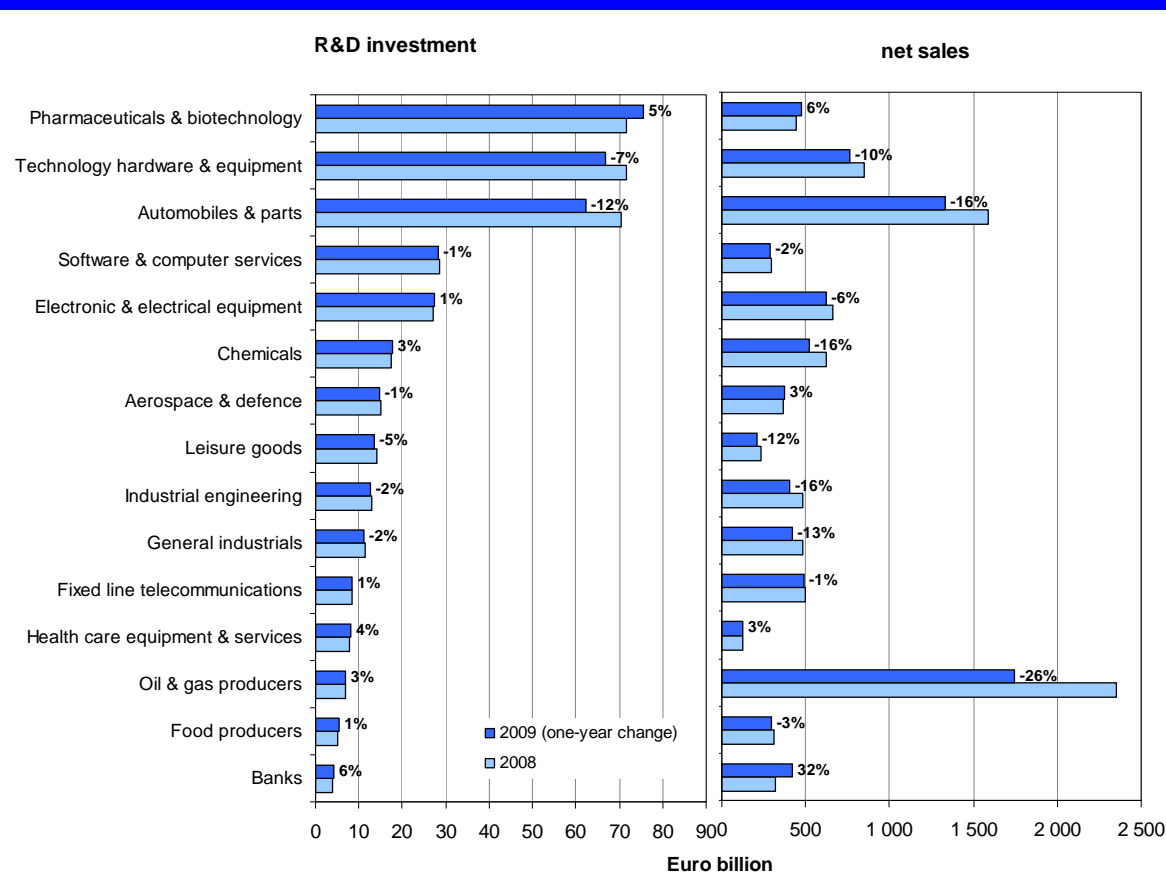
Source: The 2010 EU Industrial R&D Investment Scoreboard, EC, JRC/DG RTD

**Scoreboard companies are mostly based in the Triad**

## **5. R&D investment by sector**

## 5. R&D investment by sector (1)

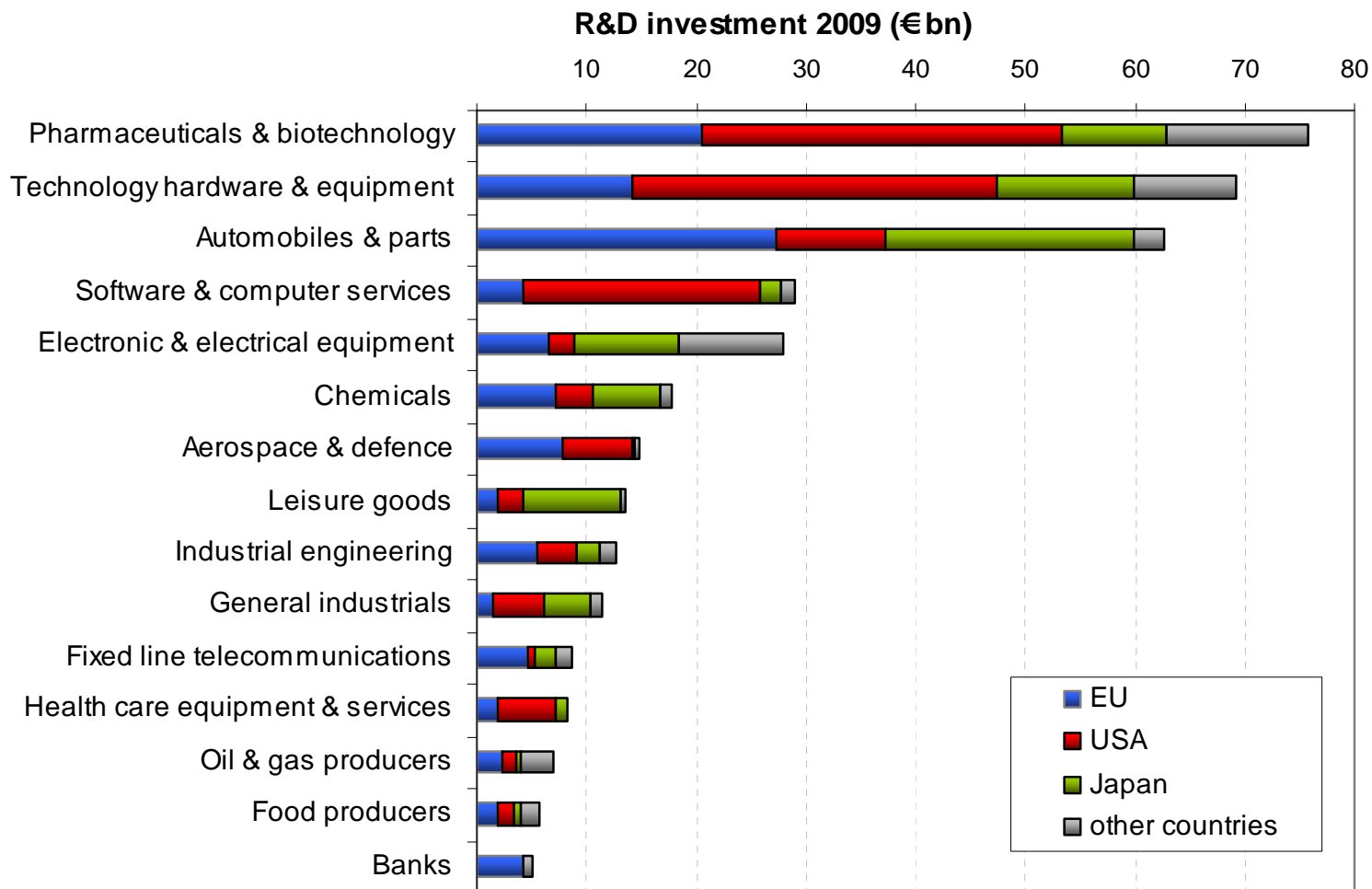
R&D investment and net sales of the top 10 sectors for the Scoreboard companies in 2008 and 2009.



Source: *The 2010 EU Industrial R&D Investment Scoreboard*  
European Commission, JRC/DG RTD.

Also significant differences are observed by sector

## 5. R&D investment by sector (2)



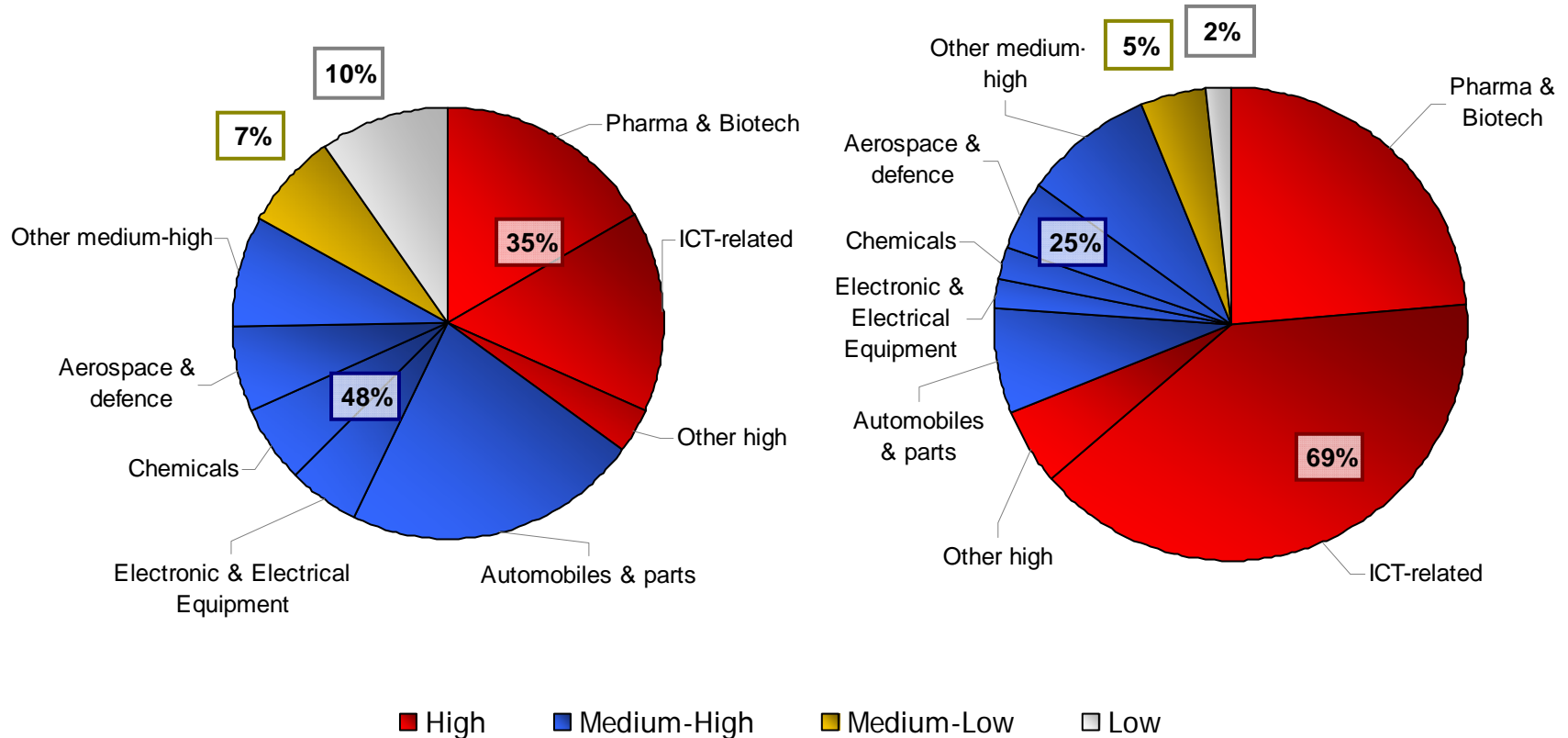
Source: The 2010 EU Industrial R&D Investment Scoreboard, EC, JRC/DG RTD

**Pharma & biotech sector reinforces its position as top R&D investor worldwide**

## 5. R&D investment by sector (3)

EU (€122.9bn)

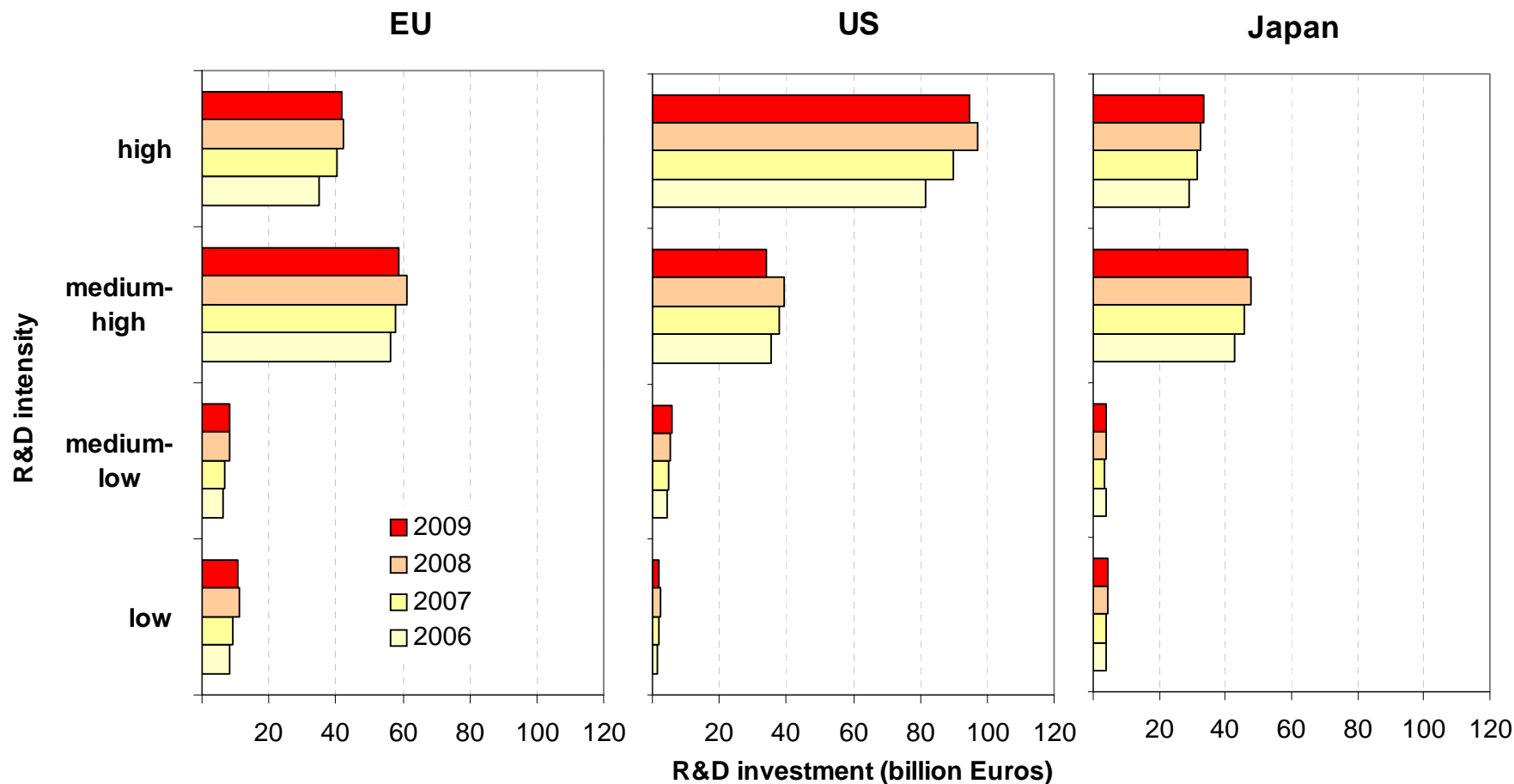
US (€137.9bn)



Source: The 2010 EU Industrial R&D Investment Scoreboard, EC, JRC/DG RTD

**The US has a strong position in high R&D-intensity sectors;  
EU in medium and low sectors**

## 5. R&D investment by sector (4)



Source: The 2010 EU Industrial R&D Investment Scoreboard, EC, JRC/DG RTD

**US R&D growth dominated by the high-tech sector, while that of the EU is spread across all sectors. The US is reinforcing its high R&D intensity sector and the EU its medium.**

## 5. R&D investment by sector (5)

### Pharma & Biotech

<b>Takeda Pharm., Japan</b>	<b>64.3%</b>
<b>Merck, US</b>	<b>21.6%</b>
<b>Astellas Pharma, Japan</b>	<b>18.3%</b>
<b>Amgen, US</b>	<b>-5.5%</b>
<b>Johnson &amp; Johnson, US</b>	<b>-7.8%</b>
<b>AstraZeneca, UK</b>	<b>-12.0%</b>

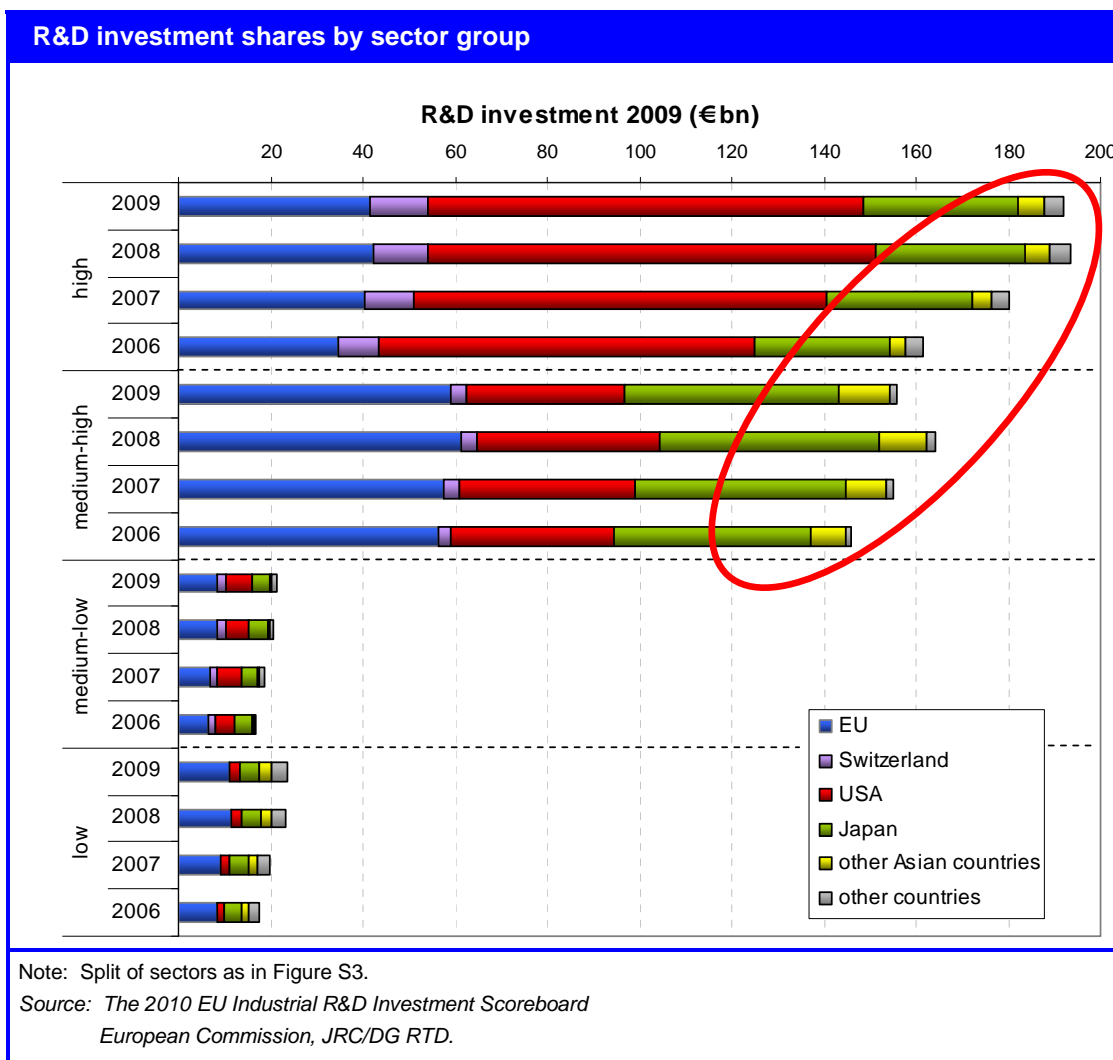
### Automobiles

<b>Suzuki Motor, Japan</b>	<b>5.7%</b>
<b>Hyundai Motor, South Korea</b>	<b>2.0%</b>
<b>Nissan Motor, Japan</b>	<b>-0.4%</b>
<b>General Motors, US</b>	<b>-24.2%</b>
<b>Renault, France</b>	<b>-26.5%</b>
<b>Ford Motor, US</b>	<b>-32.9%</b>

*Note: Best and worst R&D performers in 2009 among the largest companies in the sector*

**Different behaviour of companies in the same sectors**

## 5. R&D investment by sector (6)



**Dynamic regions likely to challenge the EU and the US in high & medium-high tech sectors**

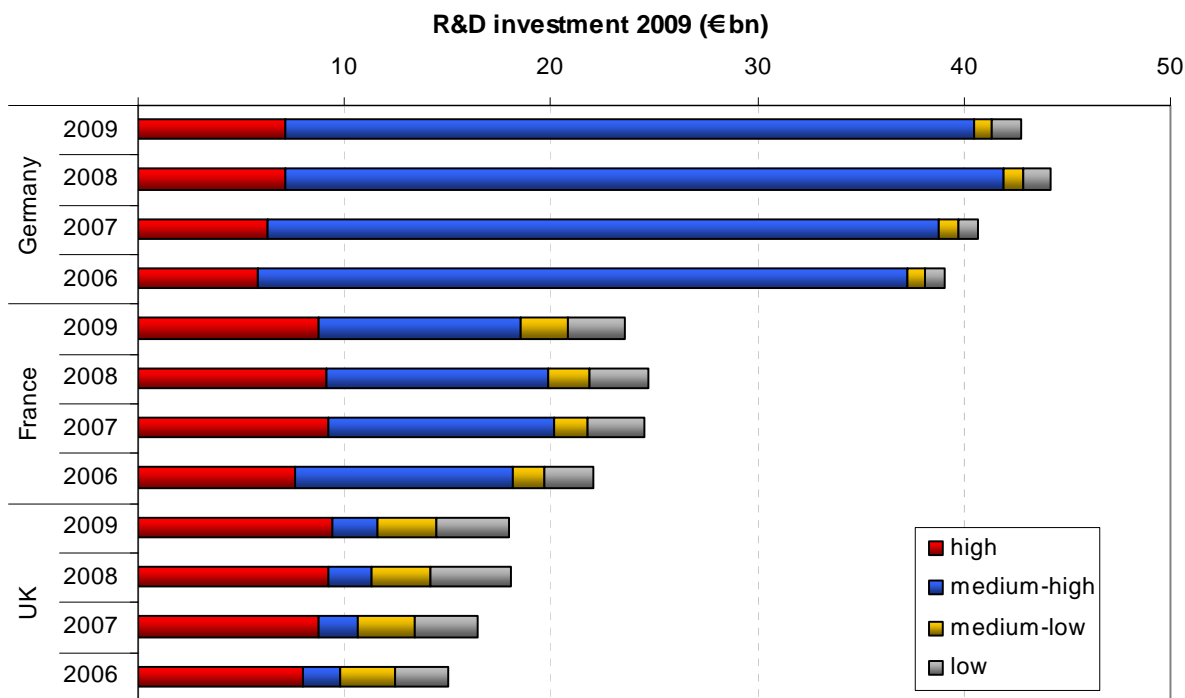
## 5. R&D investment by sector (7)

ICB sector, 4-digits	EU R&D, €m	USA R&D, €m	Overall R&D intensity, %
<i>Most R&amp;D intensive (&gt;10%)</i>			
Biotechnology	877.6	7642.7	21.2
Semiconductors	3344.4	15457.5	16.8
Pharmaceuticals	19717.5	25097.4	15.4
Software	3454.3	14320.6	14.6
Telecom equip.	10559.3	10494.9	12.7
Internet	0.0	3167.6	12.0
<i>Other, largest R&amp;D investing sectors</i>			
Automobiles & parts	27257.7	9963.5	4.7
Chemicals	7189.6	3389.6	3.4
Electronic equipment	958.2	1663.8	4.5
Computer hardware	86.7	6617.1	4.0
Aerospace & defence	7834.7	6405.8	3.9

**Small R&D size of the EU in key industries**

## 5. R&D investment by sector (8)

R&D investment shares in Germany, France and the UK, by sector group



Note: Split of sectors as in Figure S5.

Source: *The 2010 EU Industrial R&D Investment Scoreboard*

European Commission, JRC/DG RTD.

- Most R&D decrease in Germany and France is due to Automobiles
- The 3 largest MS keep high level of R&D in high tech

## Summary of the 2010 *Scoreboard*

- **Worldwide corporate R&D proved resilient to the global recession (R&D drop by 1.9% & sales by 10.1%)**
- **Toyota is first R&D investor followed by Roche; Volkswagen in 4<sup>th</sup> position is biggest R&D investor in the EU**
- **Overall R&D figures mask significant differences by**
  - **Sector: pharma continued to rise (5.3%) whereas automotive & IT hardware were severely hit (-11.6% vs -6.4%)**
  - **Region: EU (-2.6%) better than US (-5.1%) whereas some Asian countries strongly increase R&D, China (40%), India (27.3%), etc.**
- **Beyond the crisis:**
  - **US dominates in high-tech and EU in medium-high tech but new players likely to challenge them over the medium term**
  - **EU's main weakness: Small R&D size of its high-tech sector**
- **EU's R&D pattern mainly shaped by countries with large share of automotive R&D (Germany and France) and IT hardware R&D (Finland and Sweden)**