**Investment and R&D**

**Investment in the EU manufacturing sector (2007)**

- **EU chemicals industry — the second leading manufacturing sector in terms of investment (in € billion, 2007)**
  - Around 2.3 million enterprises were operating in the EU-27 manufacturing sector in 2007, generating together €262.4 billion of gross investment in tangible goods.
  - Sectoral data show that the largest three subsectors in 2007, at the NACE division level, were food & beverages; chemicals, including pharmaceuticals; the category motor vehicles. Taken together, they contributed in 2007 to 35.3 per cent of total investment.
  - The EU chemicals industry is the second largest contributor in the EU manufacturing sector, accounting for €28.9 billion in investment.
  - Gross investment in tangible goods is defined as investment in all tangible goods. Included are new and existing tangible capital goods, whether bought from third parties or produced for own use (i.e. capitalised production of tangible capital goods), having a useful life of more than one year, including non-produced tangible goods such as land. Investments in intangible and financial assets are excluded (Source: European Commission, SBS database).
Capital spending in the Western European chemicals industry

- Investments in innovation, including research & development (R&D) are key elements in securing the future of the chemicals industry. They not only promote the adaptation to and the development of new technologies and innovation, but are necessary prerequisites for the continuous adjustment of corporate structures to the needs of the marketplace.

- It is worth noting that the currently available figures on R&D investments give only part of the picture, as it is only the starting point on the path to successful innovation. Innovation spending in companies is increasingly included under business development.

- Western Europe covers the first 15 member states of the European Union, plus Norway and Switzerland.

- In absolute figures, investment in Western Europe had been declining from 1998 to 2001. The years from 2001 to 2008 registered and followed a positive trend at a consistent pace. Investment in 2010 recovered slightly, going up by 2.5 per cent in value terms compared with 2009.

- In relative terms, the ratio of capital spending to sales, or capital intensity, of the Western European chemicals industry, including pharmaceuticals, has been declining since 1998 and reached the value of 4.8 per cent in 2010, down from 7.5 per cent registered in 1998.

Sources: American Chemistry Council (ACC) and Cefic analysis

Unless specified, chemicals industry excludes pharmaceuticals
Unless specified, EU refers to EU-27
Investment and R&D

International comparison of chemicals sector* capital spending

China and the rest of Asia-Pacific attract the bulk of chemicals investment

- Capital spending in the chemicals industry in Western Europe reached a modest level of US$46.3 billion in 2010. It represents about 10 per cent of world capital spending in value terms, or US$464.3 billion.
- Comparing 2010 to 2000, the contribution of Western Europe to world chemicals spending in value terms declined dramatically by 12.2 percentage points, from 22.2 per cent in 2000 to about 10 per cent in 2010.
- The total value of capital spending in Western Europe has been growing continuously since 2000, but overall world chemicals capital spending has grown at an even faster clip. In value terms, world chemicals spending increased by 2.5 times in 2010 compared with 2000.
- China and the rest of Asia-Pacific region are the clear leader in terms of capital spending, accounting for 72.8 per cent of world chemicals capital spending in 2010, up from 38.6 per cent in 2000. China and the rest of Asia-Pacific attract the bulk of chemicals investment, considered a key factor for overall competitiveness.

Source: American Chemistry Council (ACC)
* Excluding Japan
Unless specified, chemicals industry excludes pharmaceuticals
Unless specified, EU refers to EU-27
**Capital intensity in China and the rest of Asia-Pacific far higher than in the rest of the world**

- In absolute figures, capital spending in the world chemicals industry rose from US$131.7 billion in 2000 to US$464.3 billion in 2010. Capital intensity, or the ratio of capital spending to sales, also registered a significant increase from 7.6 per cent in 2000 to 11.3 per cent in 2010.

- Capital intensity in China and the rest of Asia-Pacific contributed greatly to positive changes on a world basis. Capital intensity in China and the rest of Asia-Pacific increased from 18.1 per cent in 2000 to 23.4 per cent in 2010.

- Capital intensity in China and the rest of Asia-Pacific is far higher than in the rest of the world. Western Europe and the North America are lagging behind, registering a constant decline during the past 10 years.

---

Source: American Chemistry Council (ACC)

* Including pharmaceuticals
** Excluding Japan

Unless specified, chemicals industry excludes pharmaceuticals

Unless specified, EU refers to EU-27
Investment and R&D
International comparison of R&D spending

With €8.1 billion in 2008, R&D spending in the chemicals industry in the European Union was significant and represented about 4.2 per cent of added value in value terms. In absolute figures, R&D spending in the chemicals industry was valued at an average annual level of €7.8 billion in the European Union during the period from 1998 to 2008. In the United States, the average value of R&D spending was €8.8 billion during the same period. The same variable amounted to €6.7 billion in the Japanese chemicals industry for a comparable 10-year period.

Source: Cefic Chemdata International

Unless specified, chemicals industry excludes pharmaceuticals
Unless specified, EU refers to EU-27
Investment and R&D

International comparison of R&D spending intensity

- The high value-added products of the chemicals industry continuously open up new fields of application, paving the way to progress and innovation in other industries. Typical examples are health, food, consumer goods, aerospace and car manufacturing, telecommunications, electrical engineering and electronics. Wide variations in research and development (R&D) efforts are observed across the chemicals industry. Turning R&D into innovation is becoming increasingly important in relation to the competitiveness of the region.

- Analysing the ratio of R&D spending to sales of the chemicals industry, it can be observed that during the 18-year time period from 1991 to 2008, the R&D intensity level in the European Union has been far below that of Japan and slightly lower than in the United States.

- Annual EU R&D intensity was equal to two per cent on average during the years 1991 to 2008, while the same ratio was equal to 2.8 per cent in the United States and to 5.1 per cent in Japan.

Source: Cefic Chemdata International