C 3 Innovation behaviour in the business sector

The biennial Europe-wide Community Innovation Surveys (CIS) provide the underlying data for international comparisons of the business sector's innovation behaviour (C 3-1).[326] Coordinated by Eurostat and based on a harmonized methodology, the CISs are conducted in all EU member states and a number of other European countries. The CISs are based on a largely uniform questionnaire and directed at businesses with ten or more employees in the manufacturing industry and selected services sectors.

The current analysis relates to 2016 (CIS 2016). In that year, the innovation intensity of the research-intensive industries in Germany amounted to 7.4 percent. It was thus higher than that of most reference countries. However, Sweden and Denmark recorded slightly higher innovation intensities at 8.2 and 7.8 percent in their respective research-intensive industries.

The data on innovation behaviour in the German business sector in the period 2003 to 2018, as shown in charts C 3-2 and C 3-3, are based on the Mannheim Innovation Panel (MIP), an annual innovation survey that has been conducted by the ZEW – Leibniz Centre for European Economic Research (ZEW) since 1993.[327] Data from the MIP constitute the German contribution to the CIS. In addition to the data to be reported to Eurostat, the MIP also includes data on companies with five to nine employees.

Innovation intensity (C 3-2) has shown only minor fluctuations in recent years in all the industrial and business-oriented services sectors reviewed. Recently, however, it increased relatively strongly in knowledge-intensive services. At 6.3 percent in 2018, innovation intensity here was 1.1 percentage points higher than in the previous year.

In 2018, the percentage of turnover generated by new products (C 3-3) declined slightly compared to the previous year in R&D-intensive industry (from 34.5 to 33.0 percent), in other industry (from 8.4 to 7.6 percent) and in knowledge-intensive services (from 13.4 to 12.8 percent). Only other services recorded an increase in the ratio (from 6.2 to 7.3 percent).

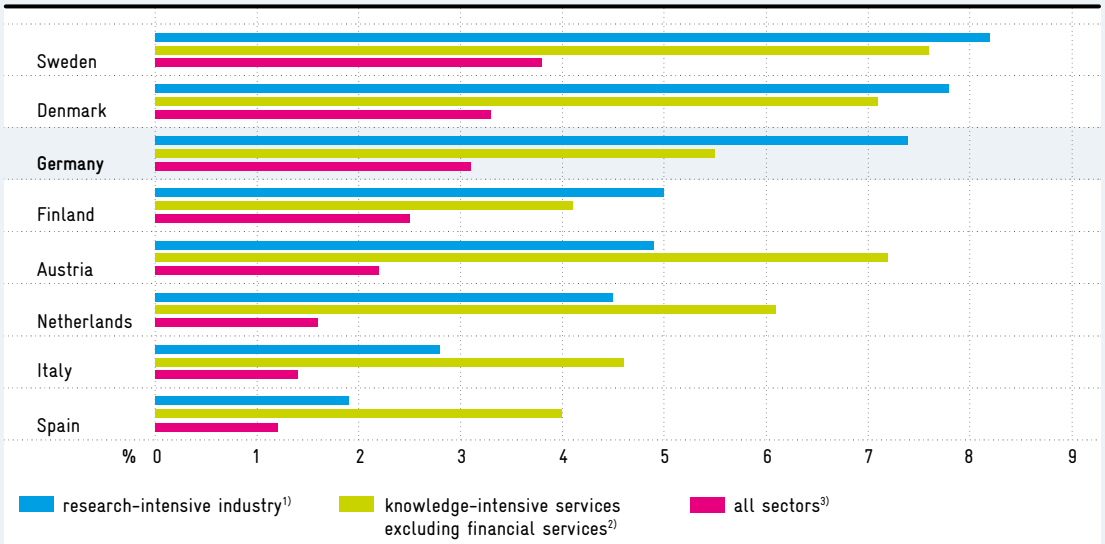
Standardization is an important factor in the commercialization of innovative technologies. At the international level, standards are developed by the committees of the International Organization for Standardization (ISO). By participating in these committees, a country can make a significant impact on global technical infrastructures (C3-4).[328] German companies have been involved in the work of the ISO considerably more frequently than representatives of other countries[329] From 2009 to 2019, Japan and above all China significantly increased the number of ISO secretariats run by their representatives.

Innovation intensity by European comparison in 2016 as percentages

Fig. C 3-1

Download data

Innovation intensity: innovation expenditure by companies as a percentage of their total turnover.



1) Research-intensive industry: divisions 19-22, 25-30 of WZ classification. Since data are not available for all sectors in all countries, the definition of research-intensive industries used in the European comparison differs from the definition normally used by the EFI.
2) Knowledge-intensive services excluding financial services: divisions 58-63, 71-73 of WZ classification. Since data are not available for all sectors in all countries, the definition of knowledge-intensive services used in the European comparison differs from the definition normally used by the EFI.
3) All sectors: divisions 5-39, 46, 49-53, 58-66, 71-73 of WZ classification.

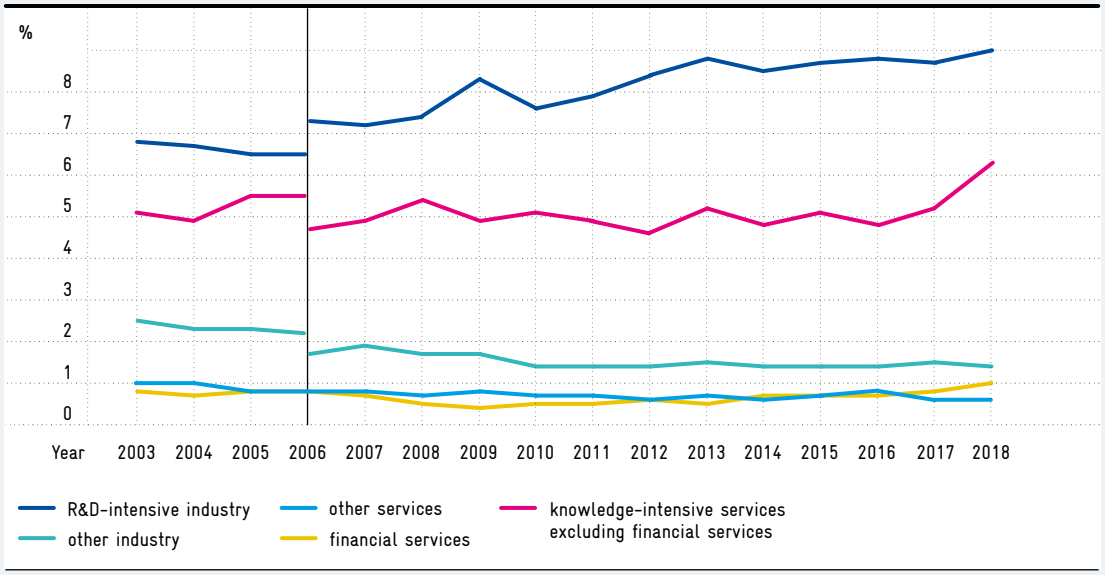
Source: Eurostat, Community Innovation Surveys 2016. Calculations by ZEW (ZEW – Leibniz Centre for European Economic Research).

Innovation intensity in industry and business-oriented services in Germany 2003-2018 as percentages

Fig. C 3-2

Download data

Innovation intensity: innovation expenditure by companies as a percentage of their total turnover.



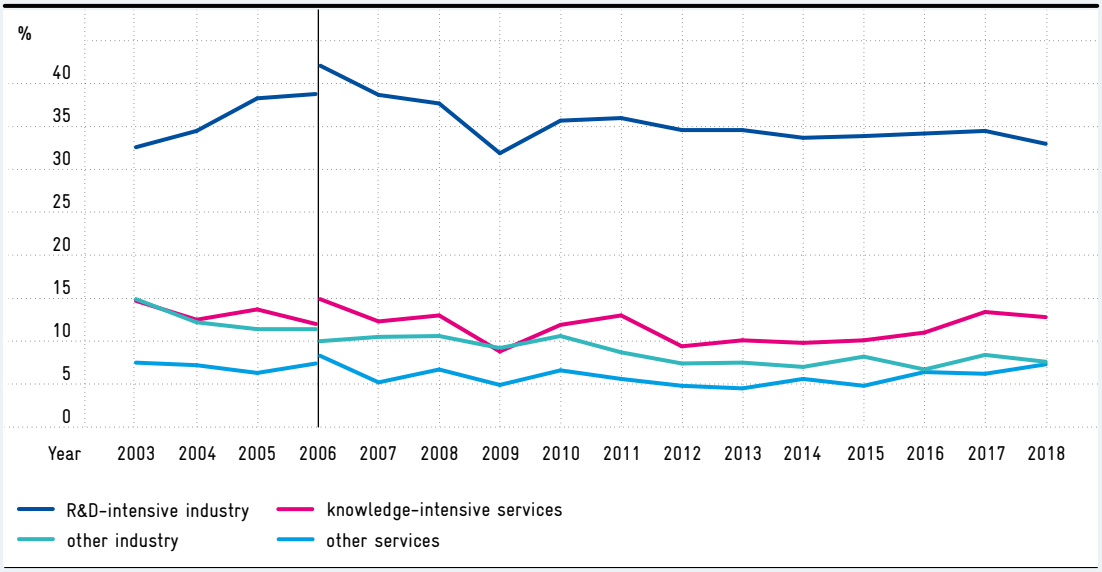
2006: break in time series.

Source: Mannheim Innovation Panel. Calculations by ZEW (ZEW – Leibniz Centre for European Economic Research).

Fig. C 3-3

Download data

Percentage of turnover generated by new products in industry and business-oriented services 2003–2018

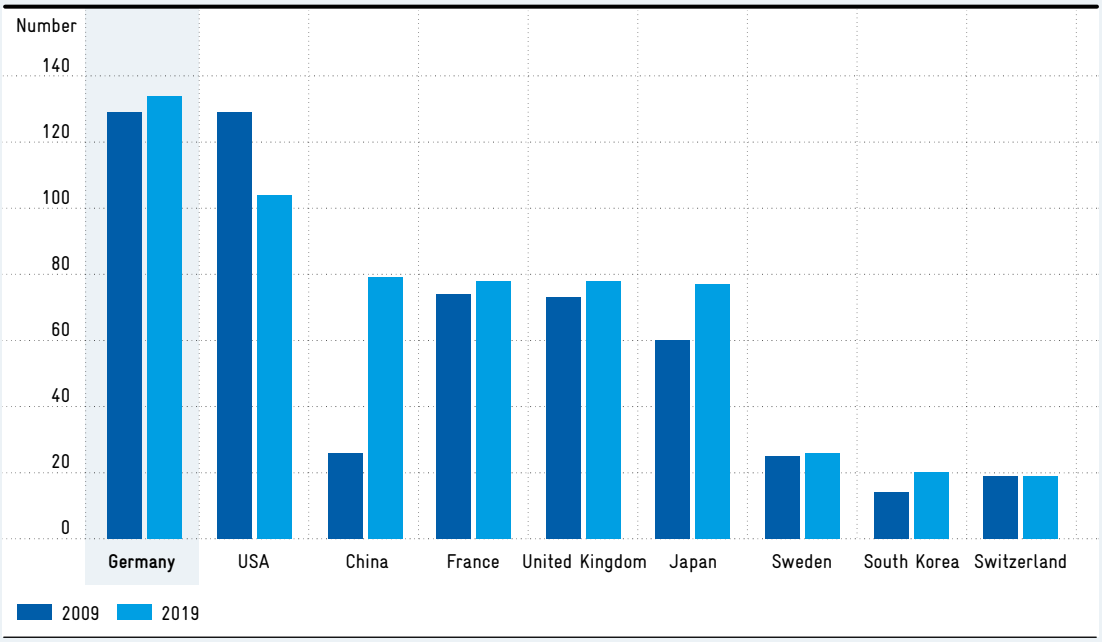


2006: break in time series.
Source: Mannheim Innovation Panel. Calculations by ZEW (ZEW – Leibniz Centre for European Economic Research).

Fig. C 3-4

Download data

Number of secretariats listed by the technical committees and subcommittees of the International Organization for Standardization (ISO)



Source: own diagram based on ISO (2010: 33) and https://www.iso.org/members.html (last accessed on 16 December 2019).