Production, value added and employment [333] C 8

A country's specialisation pattern in foreign trade can be measured using the RCA indicator,[334] which shows a product group's export/import ratio relative to the export/import ratio of the manufacturing sector as a whole. As in previous years, in 2013 Germany again showed a comparative advantage in the trade in R&D-intensive goods (C 8-1). R&D-intensive goods are made up of high-value technology goods and cutting-edge technology goods. Germany has a positive comparative advantage only in trade in high-value technology goods; in trade in cutting-edge technology goods it has a negative comparative advantage, albeit with a slightly positive trend. By contrast, France, Switzerland, the USA and Korea have positive RCA indicator figures for cutting-edge technology. France and Switzerland, furthermore, show a continuous increase. The figures for the United States and Korea, however, have declined in recent years. Japan and China have negative RCA indicator values in cutting-edge technology. After rising for a few years, the figure for China has been falling again recently; in Japan it has been declining continuously for years.

The contribution of research- and knowledge-intensive industries to a country's value added reflects the importance of these industries and allows conclusions to be drawn on the country's technological performance (C 8-2). Relative to the other countries studied, Germany has the highest share of value added in the field of high-value technology. In 2012, it amounted to 8.2 percent of total German value added. In the field of cutting-edge technology, Germany's figure of 2.4 percent is much lower than the frontrunners Switzerland (8.1 percent) and Korea (7.3 percent).[335]

Following the decline in gross value added in several industrial sectors during the crisis year of 2009, value added in Germany has risen again since 2010 (C 8-3). However, the increase between 2011 and 2012 was smaller than in the previous years. Between 2011 and 2012, the biggest rise in value added was observed in knowledge-intensive services (3.2 percent). Similar growth rates were recorded by knowledge-intensive manufacturing (2.8 percent) and non-knowledge-intensive manufacturing (2.6 percent). The increase in the field of non-knowledge-intensive services was only 0.4 percent.

A similar trend can be observed in the development of employment covered by social security (C 8-4). Here, too, between 2011 and 2012 the highest increase was in employment in knowledge-intensive services (3.0 percent). There were also increases in knowledge-intensive manufacturing and non-knowledge-intensive services (1.1 percent and 0.7 percent respectively). Only in non-knowledge-intensive manufacturing did employment covered by social security stagnate.

C 8-1

Data
Download

Revealed comparative advantages (RCA) of selected countries in foreign trade in research-intensive goods 2000 to 2013

A positive RCA value means that the export/import ratio for this product group is higher than that of the total of all manufactured industrial goods.

Year	China [1]	France	Germany	Great Britain	Japan	Korea	Sweden	Switzerland	USA [2]
				R&D-intensive goods					
2000	-41	7	11	14	47	0	0	10	13
2005	-29	7	10	14	42	17	-1	18	17
2010	-27	6	12	11	33	19	-6	22	1
2013	-29	7	16	-7	34	20	-6	21	-2
				High-value technology goods					
2000	-17	5	27	10	86	5	-7	26	-13
2005	0	6	27	4	75	11	-2	24	-5
2010	-16	-2	30	15	61	7	-3	21	-10
2013	-10	-5	30	-3	70	17	-2	16	-13
				Cutting-edge technology goods					
2000	-66	11	-27	19	-10	-5	13	-30	47
2005	-53	8	-34	33	-14	24	1	4	55
2010	-35	20	-35	1	-22	33	-11	25	22
2013	-45	23	-23	-16	-37	23	-19	32	17

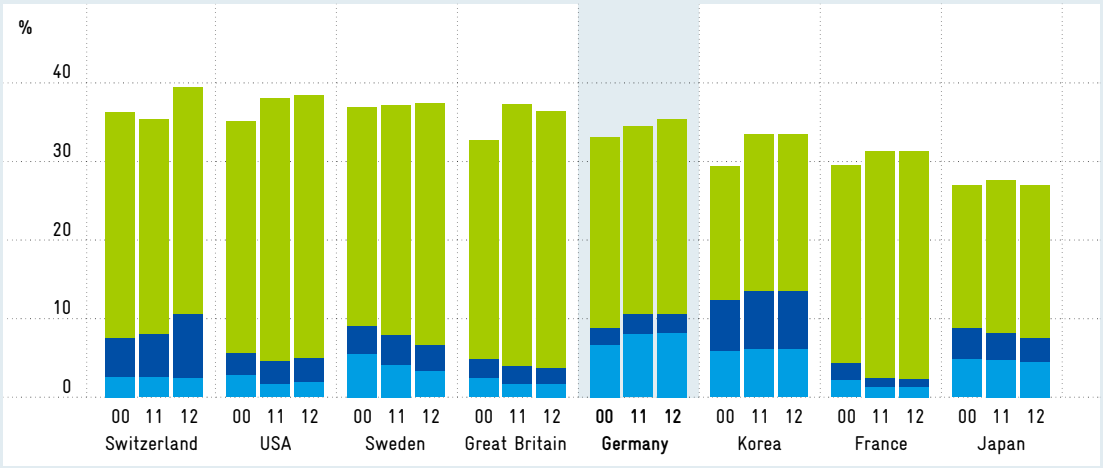
[1] Incl. Hong Kong, 2013 estimated. [2] From 2009, data for the USA have been revised on the basis of national sources.
Source: UN COMTRADE Database. Calculations and estimates by NIW in Gehrke and Schiersch (2015).

C 8-2

Data
Download

R&D-intensive industries and knowledge-intensive services as a percentage of value added 2000 to 2012

R&D-intensive industries have an above-average R&D intensity, while knowledge-intensive services are characterised by an above-average proportion of employees with tertiary education qualifications.

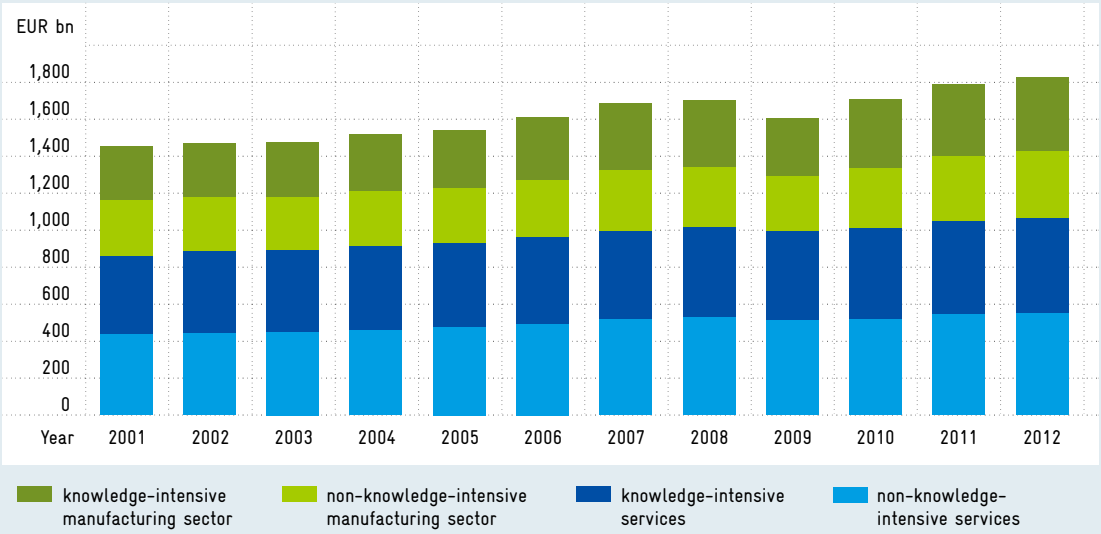


Source: OECD-STAN (2014), Eurostat (2014), EUKLEMS (2013, 2007), BEA (2014), BOK (2014), Statistics Bureau, Ministry of Internal Affairs and Communications Japan (2013). Calculations and estimates by DIW Berlin in Gehrke and Schiersch (2015).

C 8-3
Data Download

Development of gross value added in various industry sectors in Germany in billions of euros

Gross value added is the difference between the total value of all goods and services produced and the intermediate inputs received from other companies for their production

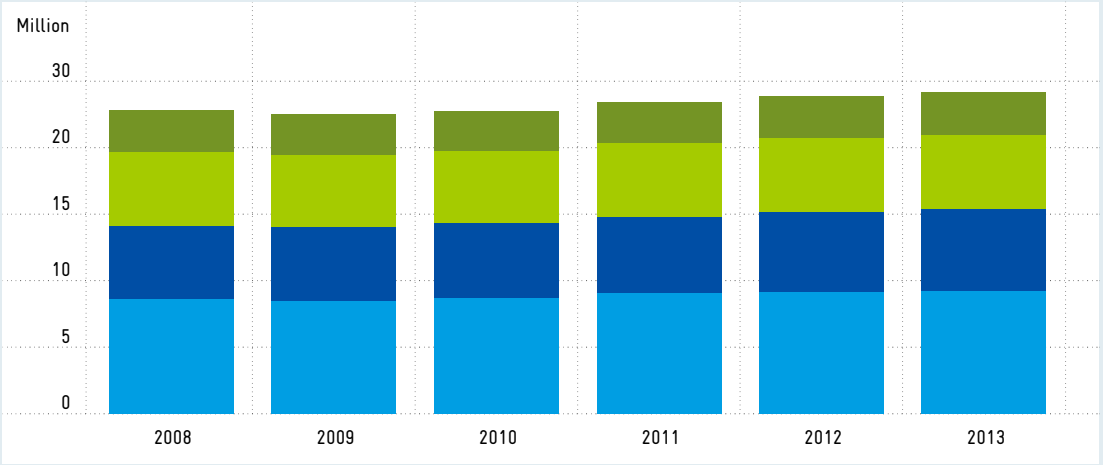


Not including agriculture, forestry, fishing, public administration and services, real estate and housing, education, private households, social insurance, religious and other organisations, associations and trade unions.
Source: Federal Statistical Office, Fachserie 18, Reihe 1.4. Calculations by NIW in Gehrke and Schiersch (2015).

C 8-4
Data Download

Development of employment covered by social security in various industry sectors in Germany

Employees covered by social security are all employees who are liable to contribute to health, pension and long-term care insurance, and/or to pay contributions according to German employment promotion law, or for whom contribution shares must be paid to statutory pension insurance or according to German employment promotion law.



Source: Federal Employment Agency. Calculations by NIW.