

7. EMPLOYMENT IN KNOWLEDGE-ORIENTED SECTORS

Knowledge-oriented sectors receive a great deal of attention due to the association with innovative products, new production processes and their impact on productivity, international competitiveness, creation of well-paying jobs and overall economic growth.

Individuals employed in knowledge-oriented sectors are often in R&D, increasing scientific knowledge and using it to develop products and production processes; others apply technology in other activities, including the design of equipment, processes, and structures; computer applications; sales, purchasing, and marketing; quality management; and the management of these activities. All these activities are classified into two groups: *high-tech manufacturing* (HTM) and *knowledge-intensive services* (KIS).

High-tech manufacturing and knowledge-intensive services have a tendency to be concentrated in certain regions since investments, infrastructure, and physical and human capital, tend to be geographically clustered.

The geographic concentration index compares the geographic distribution of employees in HTM and KIS and the area of all the regions (Figure 7.1). In 2005, Korea displayed the highest concentration of KIS, followed at a certain distance by Greece, Finland, and Spain. Greece together with Turkey, Finland and Spain, are the countries with the highest geographic concentration of HTM. The Czech Republic, Poland, the Netherlands and Ireland display the lowest concentration of HTM, while the Slovak Republic, Poland and Norway were the least concentrated in KIS (Figure 7.1).

Significant international differences in the percentage of workers employed in knowledge-oriented sectors hide even larger differences among regions (Figure 7.2). Turkey, Korea, and Portugal, display high regional variation. In several countries one region appears to be leading in the rate of knowledge-oriented employment.

Figures 7.3 and 7.4 compare the regions where the rate of HTM and KIS is the highest to their country average. Baden Wuerttemberg in Germany is the region with the highest rate of employment in HTM, followed by the Franche-Compté in France and Western Transdanubia in Hungary.

The regions with the highest rate of employment in KIS, shown in Figure 7.4, are almost all capital regions where the bulk of public administrations tend to be concentrated. Stockholm has the highest rate of KIS followed by London. In almost all the regions taken into consideration KIS as a percentage of total services is above 50%. Particularly low is the ratio in the Korean Capital region and in Ankara (respectively 13% and 33%).

Definition

Employment in knowledge-oriented sectors is defined as employment in high-technology manufacturing sectors and knowledge-intensive services.

Employment in high-technology manufacturing sectors corresponds to the following ISIC Divisions/Groups/Classes: 2423 Manufacture of pharmaceuticals, medicinal chemicals and botanical products; 30 Manufacture of office machinery and computers; 32 Manufacture of radio, television and communication equipment and apparatus; 33 Manufacture of medical, precision and optical instruments, watches and clocks; 353 Manufacture of aircraft and spacecraft.

Employment in knowledge-intensive services includes employment in the following ISIC divisions: 61 Water transport, 62 Air transport, 64 Post and telecommunications, 65 Financial intermediation, except insurance and pension funding, 66 Insurance and pension funding, except compulsory social security, 67 Activities auxiliary to financial intermediation, 70 Real estate activities, 71 Renting of machinery and equipment without operator and of personal and household goods, 72 Computer and related activities, 73 Research and development, 74 Other business activities, 80 Education, 85 Health and social work and 92 Recreational, cultural and sporting activities.

Source

OECD Regional Database, <http://stats.oecd.org/WBOS>, theme: Regional Statistics.

See Annex B for more information on data sources and country related metadata.

Reference years and territorial level

2005; TL2

Data for Australia, Iceland, Mexico and Japan are not available at the regional level.

Figure notes

Figure 7.2: As a percentage of the country average.

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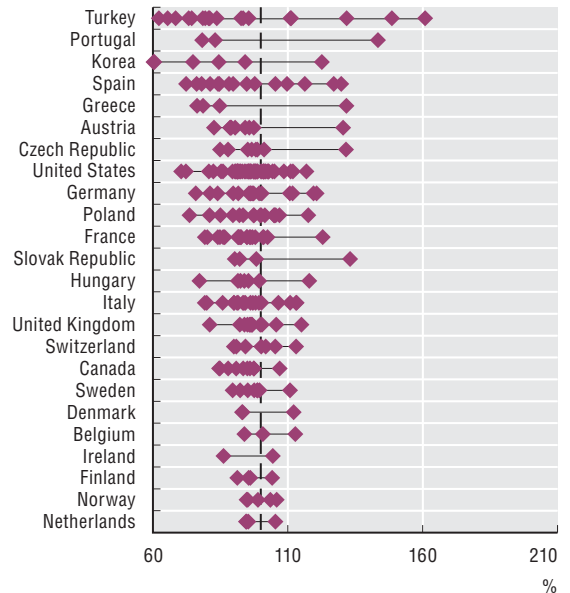
7.1 Concentration index of employment in high-tech manufacturing and knowledge-intensive services, 2005 (TL2)

Knowledge-intensive services are most concentrated in Korea and Greece.



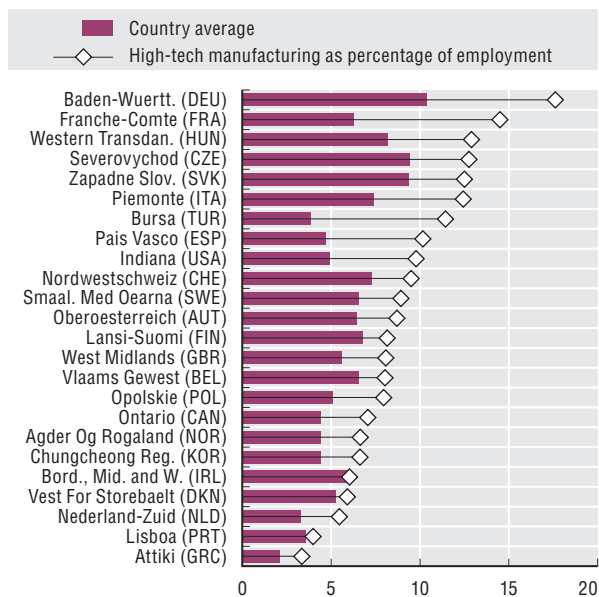
7.2 Range in TL2 regional knowledge-oriented sectors as a per cent of total employment, 2005

In several countries one region seems to be leading in the rate of knowledge-oriented employment.



7.3 Regions with the highest percentage of high-tech manufacturing compared to the country average, 2005 (TL2)

Baden Wuerttemberg, Germany, has the highest rate of employment in high-tech manufacturing.



7.4 Regions with the highest percentage of knowledge-intensive services compared to the country average, 2005 (TL2)

Stockholm, Sweden, has the highest rate of employment in knowledge-intensive services.



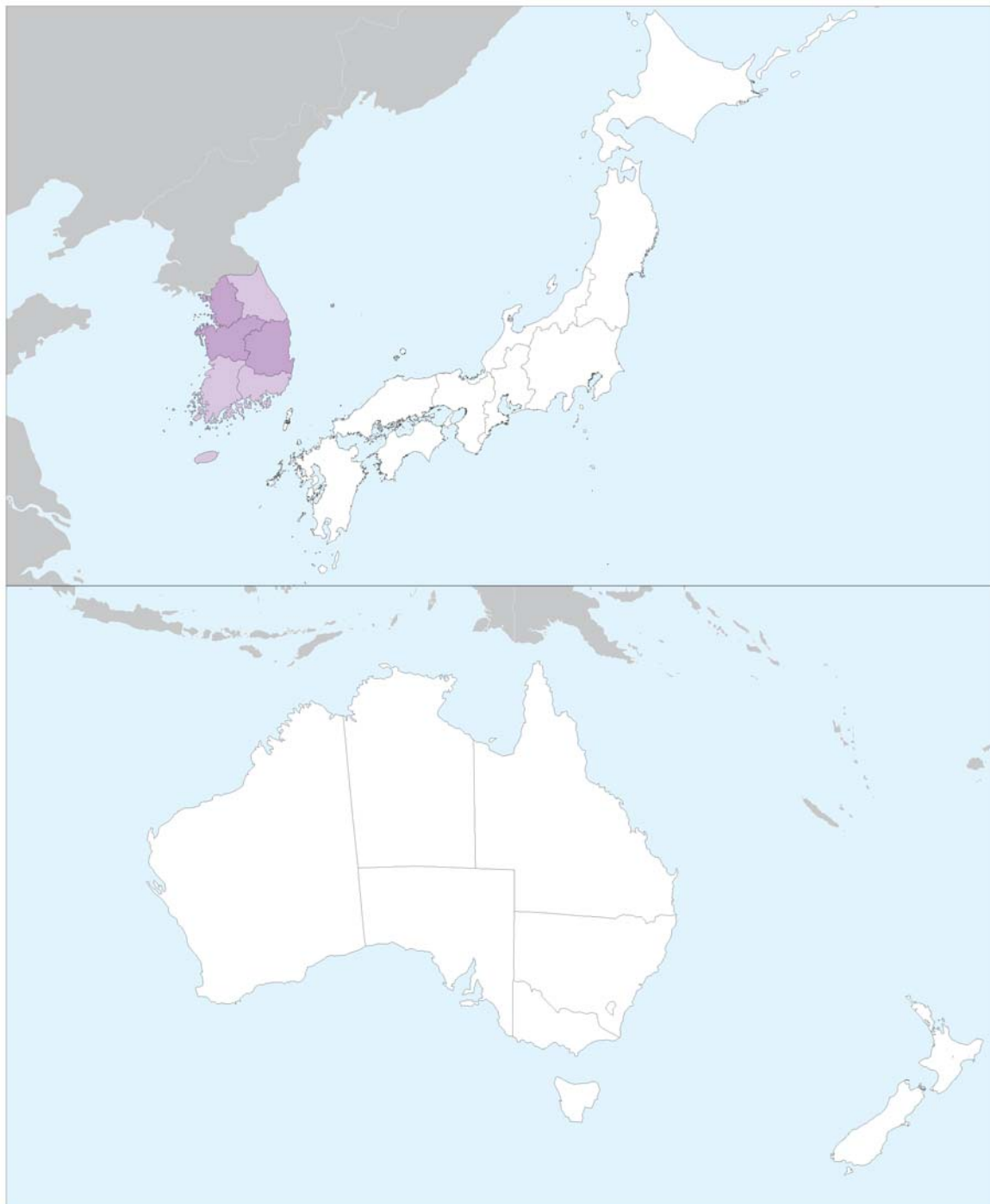
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7.5 High-tech manufacturing as percentage of total manufacturing: Asia and Oceania

TL2 regions, 2005

- Higher than 46%
- Between 40% and 46%
- Between 35% and 40%
- Between 30% and 35%
- Between 20% and 30%
- Lower than 20%
- Data not available

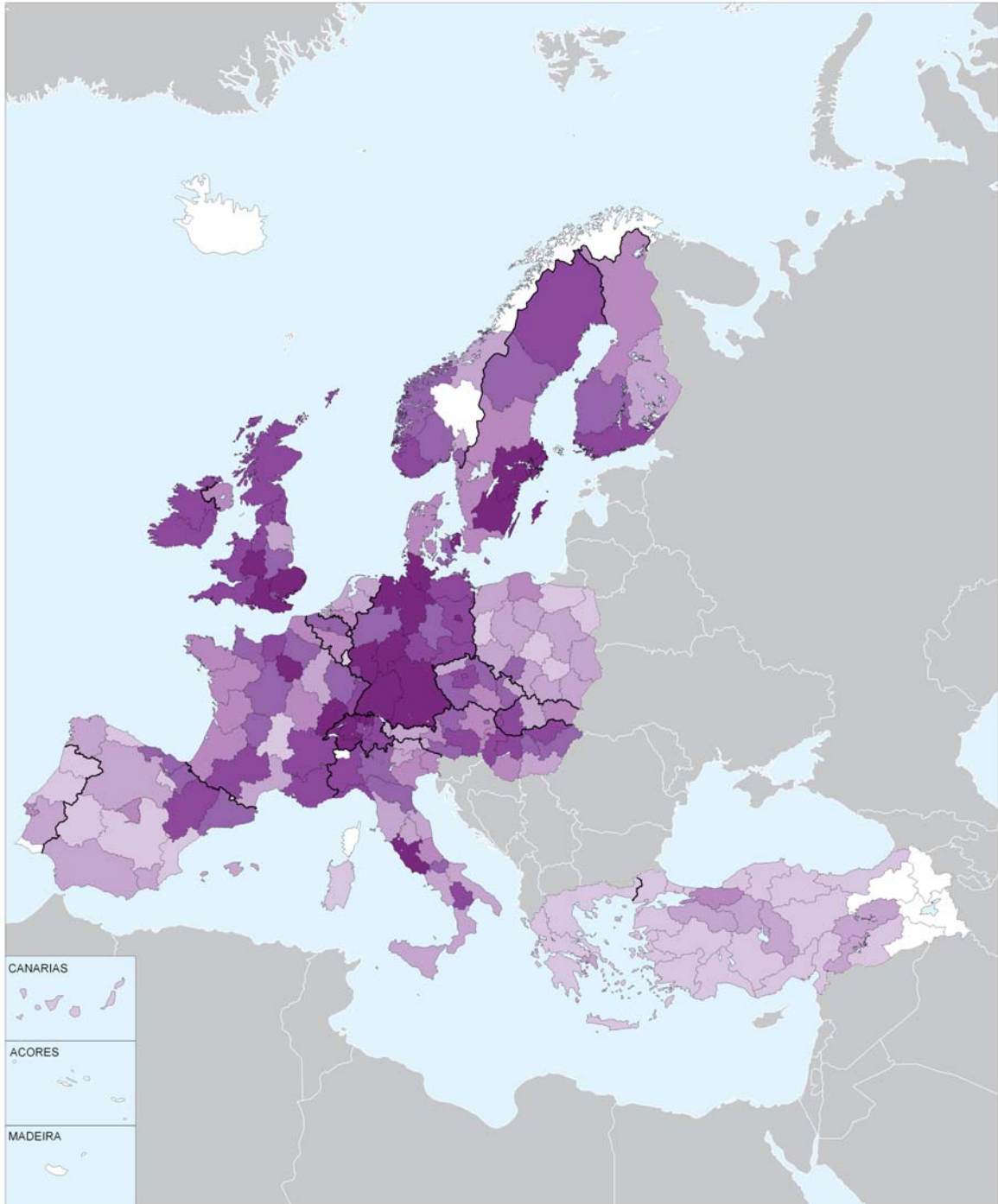


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7.6 High-tech manufacturing as percentage of total manufacturing: Europe

TL2 regions, 2005

- Higher than 46%
- Between 40% and 46%
- Between 35% and 40%
- Between 30% and 35%
- Between 20% and 30%
- Lower than 20%
- Data not available



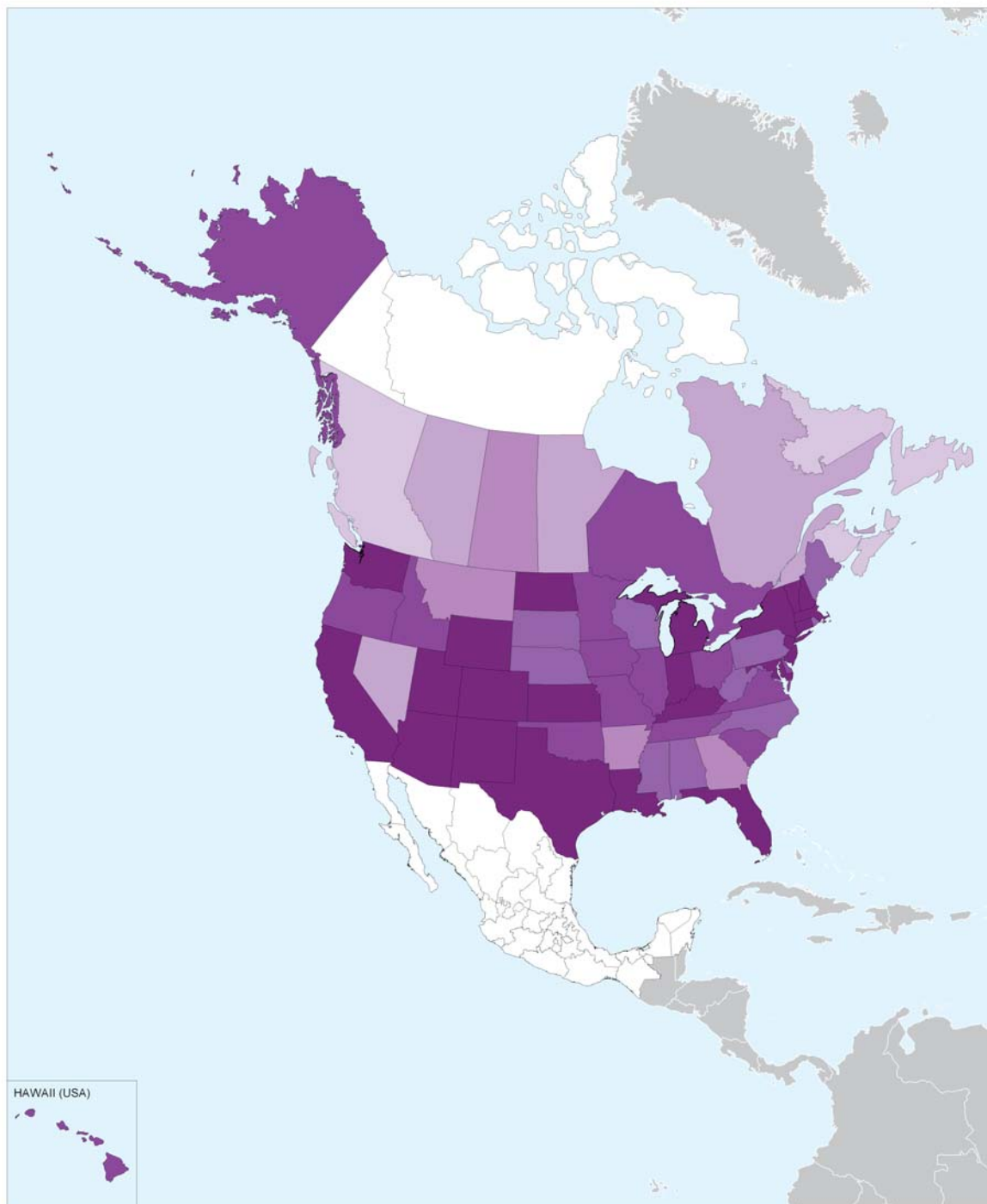
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7.7 High-tech manufacturing as percentage of total manufacturing: North America

TL2 regions, 2005

- Higher than 46%
- Between 40% and 46%
- Between 35% and 40%
- Between 30% and 35%
- Between 20% and 30%
- Lower than 20%
- Data not available



StatLink  <http://dx.doi.org/10.1787/524541554125>

Regions rapidly specialising in knowledge-oriented sectors

A region's degree of specialisation in an industry is measured according to the Balassa-Hoover index which is computed as the ratio between the weight of an industry in a region and the weight of the same industry in the country. Values of the index above or below 1 reflect respectively a specialisation higher or lower than the national average.

Figures 7.8 and 7.9 show the regions increasing their specialisation the most between 1995 and 2005 for the high-tech manufacturing (HTM) and knowledge-intensive services (KIS) sectors.

Concerning high-tech manufacturing, with the exception of Zuid Netherland in the Netherlands, Vlaams Gewest in Belgium, Lansi Suomi in Finland and Border, Midland and Western in Ireland (compare with Figure 7.3), regions specialising faster in HTM over time are not the same showing the highest percentage of HTM in levels in 2005. Moreover about half of the fast-specialising regions displayed a specialisation index relatively low in 2005 (lower or equal to 1). In most OECD countries processes of regional catching up are taking place in the high-tech manufacturing sector (Figure 7.8).

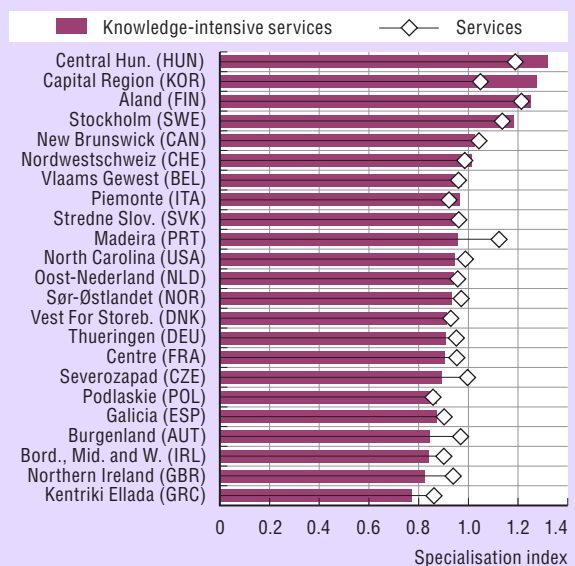
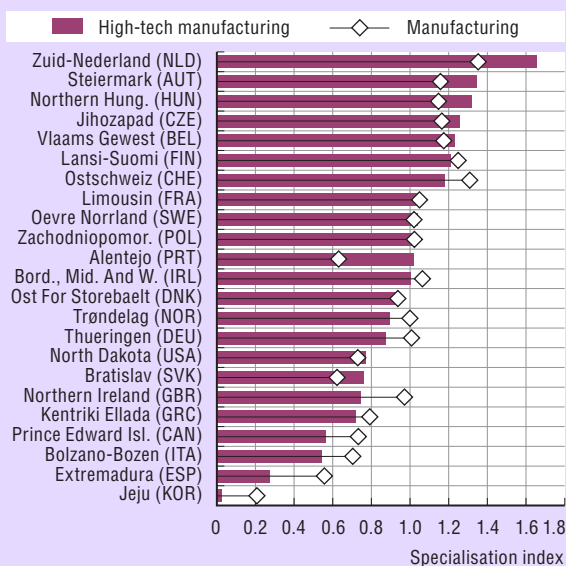
A pattern common to almost all the regions with a specialisation index in HTM lower than 1 is that they are more specialised in total manufacturing than HTM. These regions are likely going through the process of transformation of their production structure moving from traditional manufacturing into more technology-intensive manufacturing.

In KIS the only regions that are specialising faster in KIS and had the highest percentage of KIS employment in 2005 are Central Hungary in Hungary, the Capital region in Korea, Aland in Finland and Stockholm in Sweden (compare with Figure 7.4). The above mentioned regions are the only ones displaying a specialisation index higher than 1. All the other regions are fast-specialising but still not so specialised in KIS. Most of the fast-specialising regions display a specialisation index for total services higher than the index for knowledge-intensive services. These regions are moving from less knowledge-intensive services toward more specialised services.

7.8 Specialisation index in HTM and manufacturing in 2005 of the TL2 regions with the highest increase in specialisation in HTM from 1995 to 2005

7.9 Specialisation index in KIS and services in 2005 of the TL2 regions with the highest increase in specialisation in KIS from 1995 to 2005

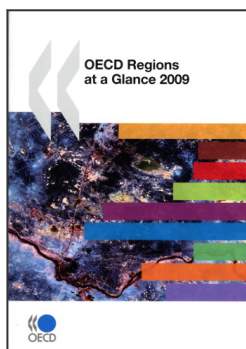
Regional catching-up processes are taking place in the high-tech manufacturing and knowledge-intensive services sectors.



For the Czech Republic, Ireland, Norway and the Slovak Republic growth is calculated over the period 1998-2005, for Finland 1999-2005, for Hungary 1997-2005, for Poland 2004-06, for Switzerland 2001-05, for the United Kingdom 1996-2005.

Data for Australia, Iceland, Mexico and Japan are not available at the regional level.

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