

6. Space manufacturing activities

Many economies have developed industrial capacities in space manufacturing. This implies industries involved in one or several high-technology value chains ranging from basic research and development, to manufacturing a satellite, its components, launch capabilities, and developing the associated ground-segment to operate these systems. Space manufacturing remains in 2014 a highly specialised high-tech industry, relatively small in size but with highly-qualified human resources. Employment may decrease over the next two years in different parts of the world (Europe, United States, Russian Federation) as several major manufacturers are restructuring their space business after mergers and putting in place vertical integration of their activities.

The US space manufacturing industry is the largest, with almost 80 000 employees and revenues of around USD 36 billion (constant). It relies on strong US government demand, with many institutional satellites (see 36. *United States*). The Department of Commerce found that in total some 348 000 employees were supporting US government space programmes in 2012, taking into account employees in governmental agencies, in the space manufacturing sector, and companies providing services to the manufacturing actors.

With some 36 000 employees in space manufacturing, the European space industry has seen continual revenue growth since 2009, reaching EUR 6.8 billion in 2013 (around USD 8.8 billion). The manufacturing industry is dependent on exports for almost half of its revenues, as compared to other industries in Asia and North America. This figure does not include satellite service operators (i.e. in telecommunications) and the employees in space agencies and other administrations supporting space programmes.

In China, the domestic space programme is keeping the space industry busy, with revenues representing some CNY 135 billion in 2013 even taking into account inflation (around USD 22 billion). The commercial revenues correspond well with the high level of outputs in the Chinese space programmes (satellites, rockets, space station). There are some 25 000 employees in industrial space manufacturing, working in state-owned enterprises and private enterprises, with still the bulk of employees (tens of thousands more) working in governmental bodies, public research centres and administrations (the Chinese space programme is under the supervision of the Chinese Ministry of National Defense).

In Japan, some 8 000 employees work in the space manufacturing industry, again not taking into account other

employees working in universities and governmental agencies. After the development of a new launcher and satellite programmes in the late 2000s, the Japanese industry revenues have remained relatively flat, around YEN 260 billion annually (around USD 2.6 billion).

Methodological notes

Four major space manufacturing industries are presented here as case studies. The data are not fully comparable and focus on commercial companies involved in space manufacturing, but they provide an indication of trends in different parts of the world, especially as the key role of domestic institutional markets appears more clearly. International comparability is limited, “space manufacturing” is a broad term used here to reflect specific manufacturing activities conducted in the space sector. It excludes many actors involved in space-related products and services (e.g. commercial operators of satellite communications), while including some non-space activities (e.g. missile production for the US data). Original data come from three industry associations in Europe, Japan (2013 data are estimates) and the United States (with survey inputs from the US Labor Bureau Statistics, 1995 data are estimates), and from the Chinese Bureau of National Statistics (2013 data are estimates). Data for revenues were converted in constant currencies so as to take into account inflation. Producer prices were used for Europe, Japan and the United States, while only consumer prices were available for China.

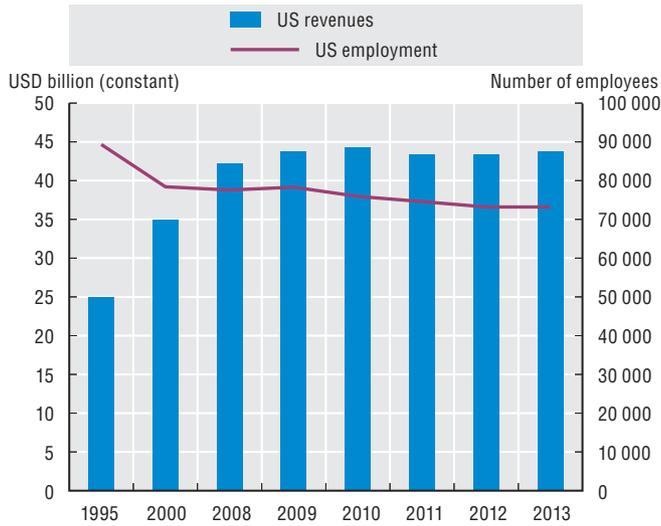
Sources

Aerospace Industries Association, www.aia-aerospace.org.
National Bureau of Statistics of China, www.stats.gov.cn.
Eurospace, www.eurospace.org.
Society of Japanese Aerospace Companies, www.sjac.or.jp/.
OECD Main Economic Indicators (MEI) Database, www.oecd.org/std/mei.

Note

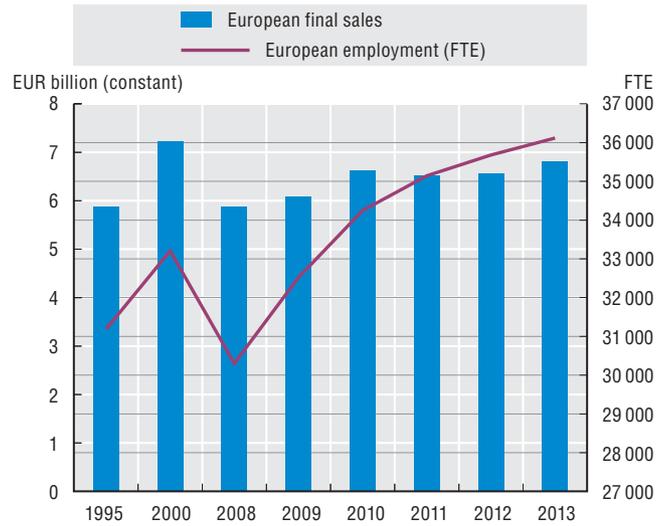
Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>.

6.1. US space manufacturing revenues and workforce



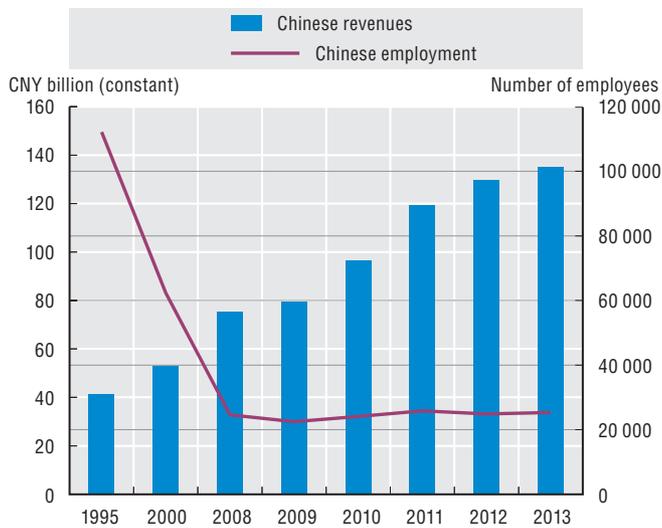
Source: AIA/LBS, 2014.

6.2. European space manufacturing revenues and workforce



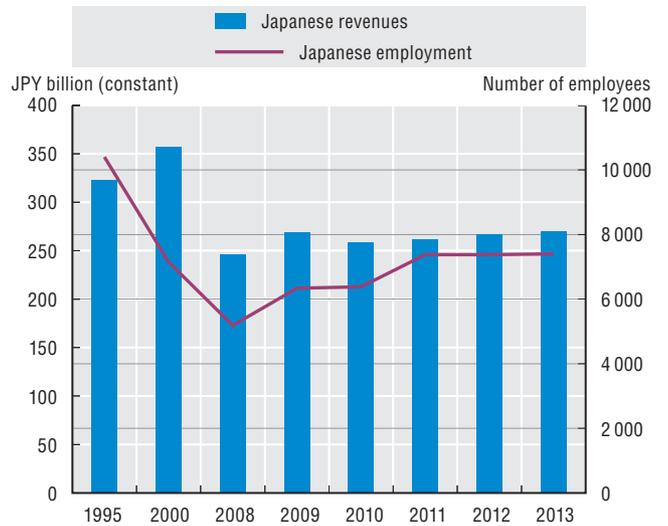
Source: Eurospace, 2014.

6.3. Chinese space manufacturing revenues and workforce



Source: OECD calculations based on the Chinese National Bureau of Statistics, 2013 and OECD MEI Database.

6.4. Japanese space manufacturing revenues and workforce



Source: OECD calculations based on SJAC, 2013 and OECD MEI Database.



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