14. Economic growth (regional, national)

The macroeconomic impacts of space programmes at regional or even national levels have been measured in countries with significant space industry (manufacturing and/or services), such as the United States, France and most recently in the United Kingdom. Economic impacts analysis is not unique to the space sector, and similar studies on economic spillovers are regularly conducted for the automobile industry, the oil industry or the defence sector (*e.g.* economic effects of large military bases).

- In France, several regional studies were conducted over the years on French Guyana, an overseas department where the European spaceport is located (INSEE, 2008 and 2010). The share of value added due to space activities accounted for 21% of French Guyana's GDP on average during the decade 1965-75. With the advent of commercial launcher and Arianespace, the economic importance of space has risen sharply in the early 1990s (28.7% in 1991). It began to decline in 1994 (25.7%), and accelerated again in 2002-03 with new Ariane 5 launches. French Guyana exports predominantly consist of space transportation services sales by Arianespace. The ratio of exports to GDP is much higher than what is found in other French overseas territories. In 2009, space transportation services account for 90% of exports of French Guyana.
- In the United States, home of the biggest space industry in terms of employment and revenues, the most recent FAA study on the wider national economic impacts of the US commercial space activities has shown a rather stable multiplier ratio since 2002 (FAA, 2010). In 2009, for every dollar spent commercial space transportation industry, USD 4.9 resulted in indirect and induced economic impact. Using the same modeling techniques as the ones used for the aeronautic industry, the results show that many economic sectors may be impacted by commercial space activities, as they provide goods and services, directly or indirectly, to the space industry. In 2009, the Information Services industry was the most affected group in terms of additional economic activity, earnings and jobs, generating over USD 65.4 billion of revenue, over USD 15.3 billion in earnings, and creating 213 230 jobs (Table 14.1).
- In the United Kingdom, where the downstream space services' sector have been growing steadily (boosted by the satellite communications sector), a national economic impacts study was also conducted recently. Including both upstream and downstream actors (from satellite manufacturers to operators and providers of services), the space industry's value-added multiplier on the British economy has been estimated to be 1.91 and the employment multiplier to be 3.34 (Figure 14.2). The space industry's direct value-added contribution to GDP was estimated at some GBP 3.8 billion and the indirect economic impacts amounted to an additional GBP 3.3 billion (*i.e.* space industry's spending on non-space UK inputs). The total UK-based employment supported by the space industry was estimated to be 83 000 in 2009 (UK Space Agency, 2010).

Methodological notes

The American and French economic impact studies apply different input/output methods, while the United Kingdom analysis is based on the results of industry survey responses. The FAA uses the Regional Input-Output Modelling System (RIMS II) developed by the Department of Commerce, Bureau of Economic Analysis. The French national statistical office INSEE has used different impacts methodologies over time.

Sources

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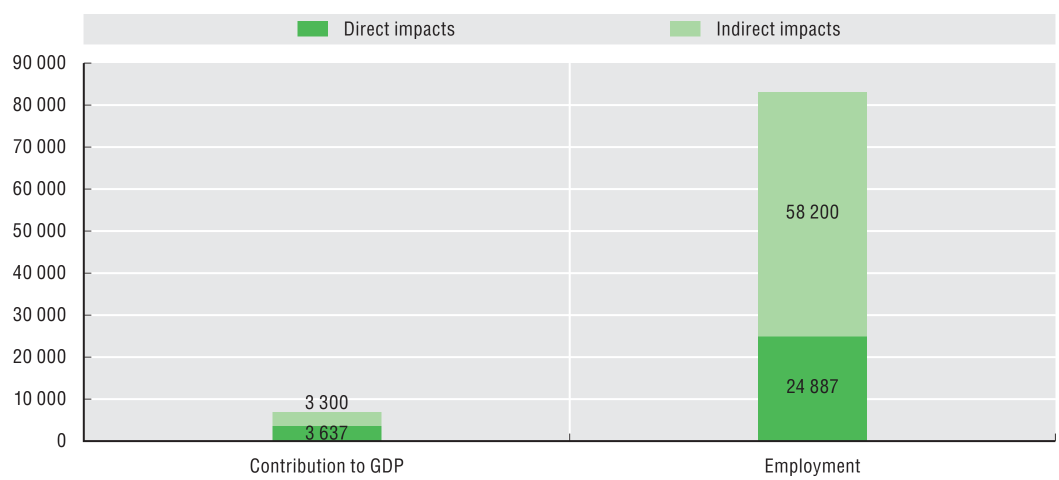
14.1 Distribution of economic activity, earnings and jobs throughout major US industry groups, generated by commercial space transportation in 2009

Industry	Annual economic activity (USD thousands)	Annual earnings (USD thousands)	Jobs (actual)
Information	65 439 541	15 300 588	213 230
Manufacturing	55 057 996	10 344 418	139 330
Real estate and rental and leasing	14 117 305	1 045 577	26 460
Finance and insurance	10 293 180	2 837 099	41 270
Wholesale trade	9 604 696	3 086 597	49 520
Professional, scientific and technical services	8 924 227	3 907 575	67 580
Health care and social assistance	7 573 426	3 686 542	86 910
Retail trade	6 433 283	2 186 157	83 970
Transportation and warehousing	4 953 733	1 721 070	37 490
Other services	4 488 631	1 487 338	49 580
Accommodation and food services	3 838 417	1 468 241	78 590
Management of companies	3 642 211	1 798 479	19 860
Administrative and waste management services	3 433 803	1 444 426	53 400
Arts, entertainment and recreation	2 943 346	1 134 515	39 430
Utilities	2 770 861	513 427	4 950
Agriculture, forestry, fishing and hunting	1 906 597	279 481	11 170
Educational Services	1 209 871	548 406	18 630
Mining	976 568	191 344	2 130
Construction	721 322	276 068	5 960
Total	**208 329 012**	**53 257 346**	**1 029 460**

Source: FAA (2010).

14.2 Economic impact of the UK space industry, 2008-09

Contribution to GDP in GBP million and jobs



Source: UKSA (2010).

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