

Eurospace facts & figures

Key 2019 facts – Press release

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July 2020

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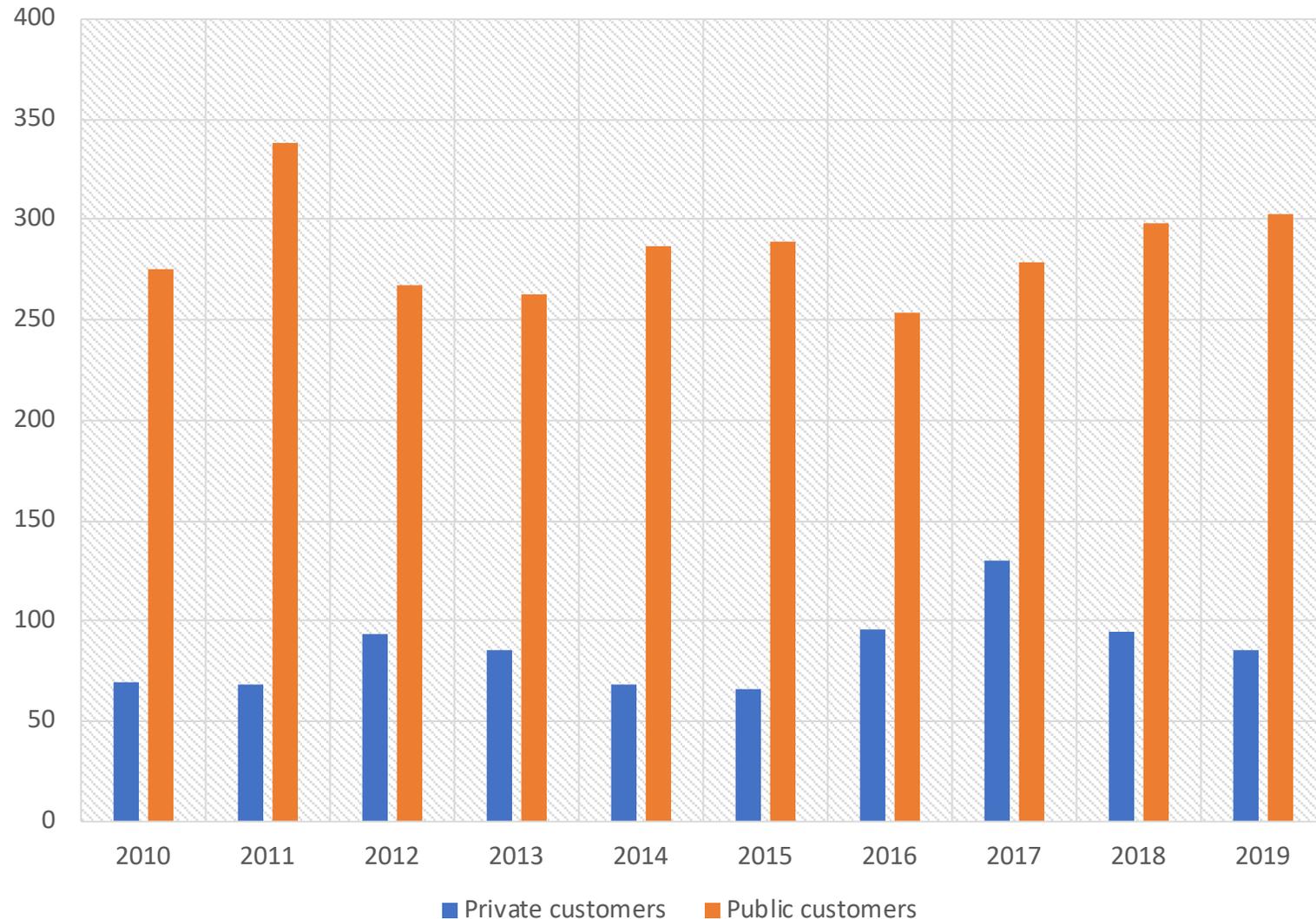
Foreword

- This 24th edition of the Eurospace facts & figures annual report was produced in a difficult moment for our sector. Europe was struck by the Covid-19 pandemic, creating management and production disruption in all companies of the European space sector.
 - This unique situation has affected Eurospace as an organisation, as well as the companies participating in the survey.
 - As a result our survey and report have been delayed and we have not been able to publish the results of our annual survey in June as we usually do.
- Furthermore, in order to avoid further delays in the publication, we have issued the first version of the report as fast as humanly possible, cutting short all review, verification and professional editing steps we usually undertake.
 - The published report may contain minor issues and inconsistencies, but the general figures and trends are considered reliable.
- The latest full report is only available to selected institutional contacts and to all the companies that have supported the survey.
 - You will find on www.eurospace.org the previous year's edition for free download.
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 - Contact Pierre Lionnet (pierre.lionnet@eurospace.org) for more information



The global context

Global launch activity 2000-2019 (mass launched in tons)



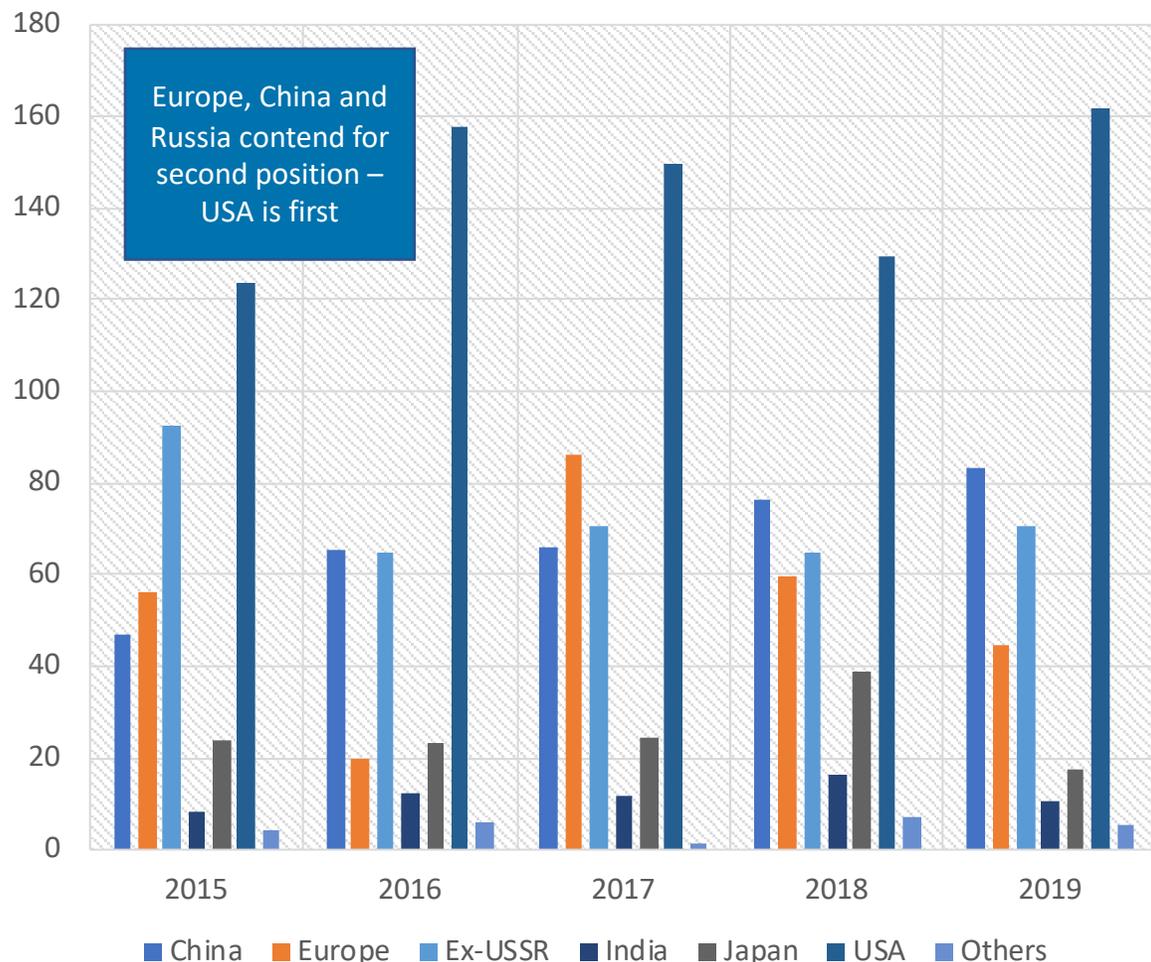
- In average 370 tons of spacecraft are launched in space every year. The average launched mass has been extremely stable since the mid nineties with a few cyclical/erratic variations. There has been no 'boom' nor a major 'crisis' in global space activity since then
- Spacecraft procured by commercial operators (i.e. not procured by institutions or government-owned entities) represent in average 20% of the annual launched mass. Privately-driven activity exhibits a slightly cyclical trend which has entered a receding phase since 2017.
- Spacecraft procured in the context of government programmes represent 80% of global space activity. They have been in slight growth since 2016.

Source: Eurospace LEAT database

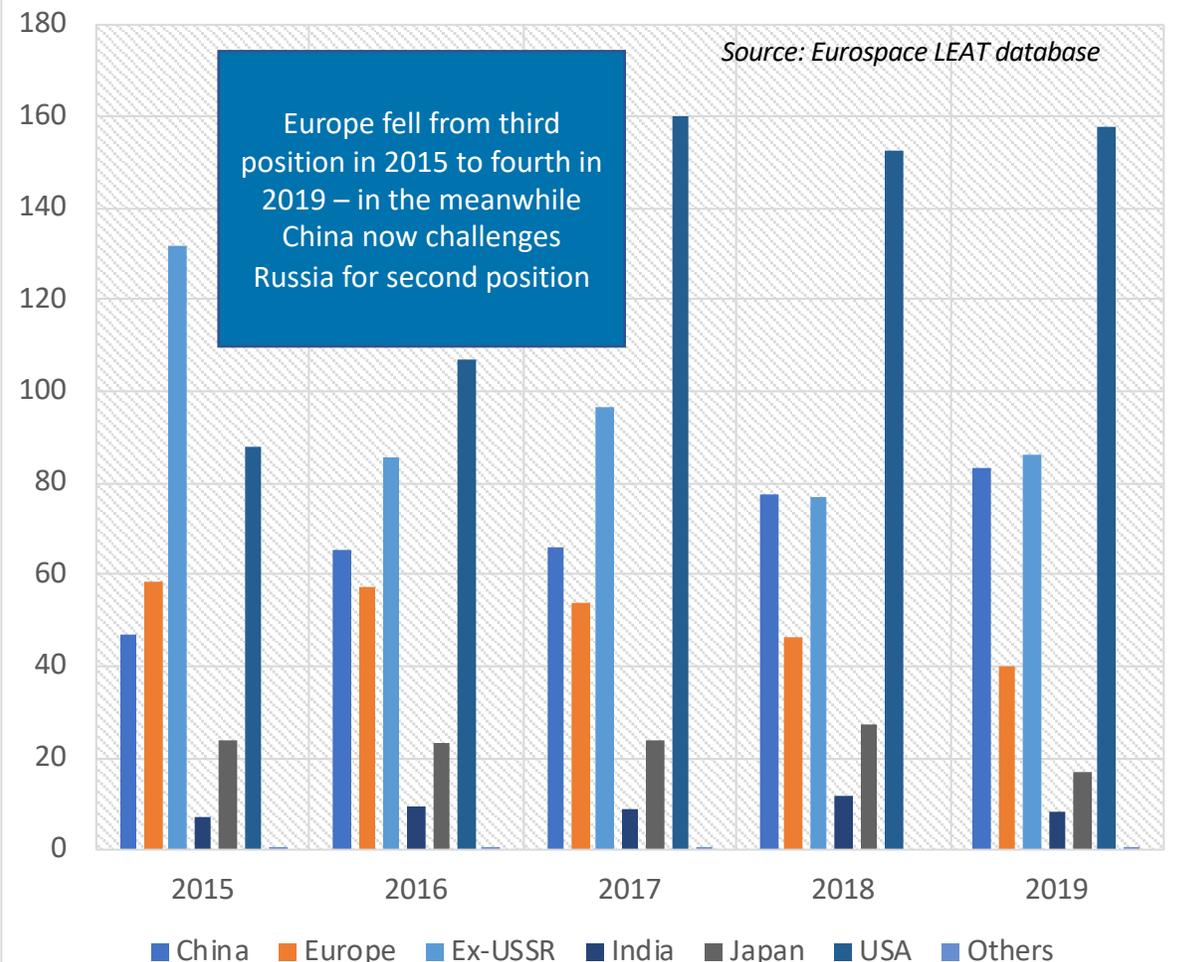
Global Space Activity in 2015-2019

Source: Eurospace LEAT database

Global Spacecraft Production by region (tons)



Global Launch Activity by Launcher Region (tons)

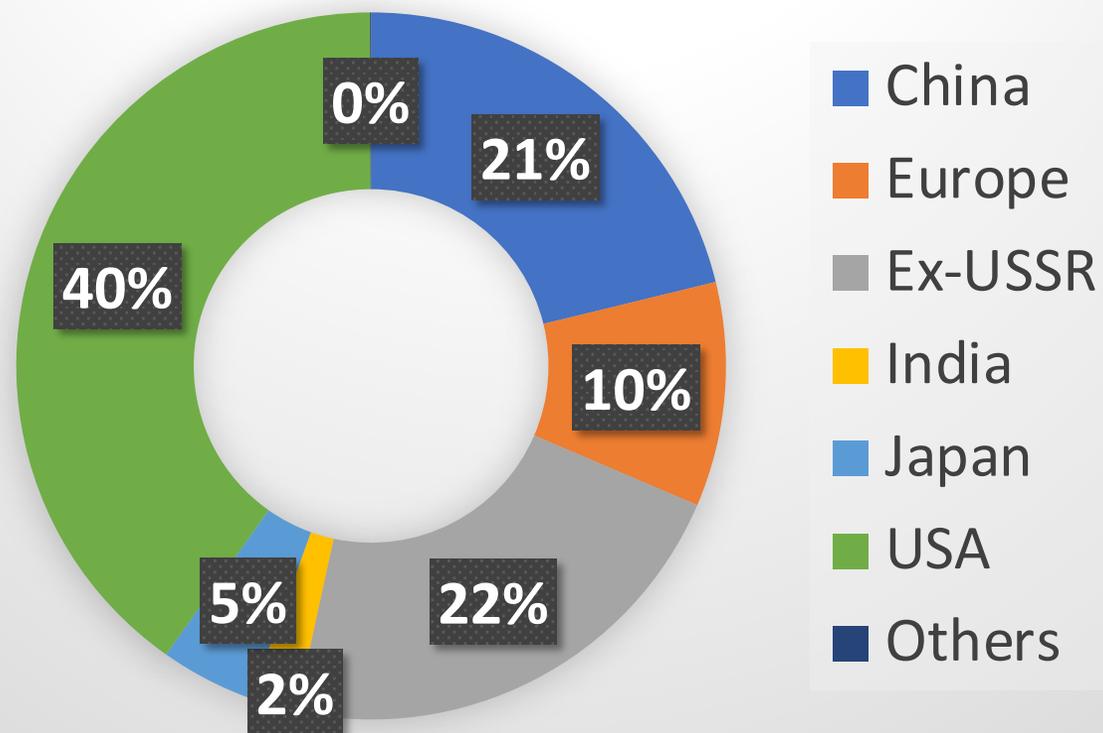
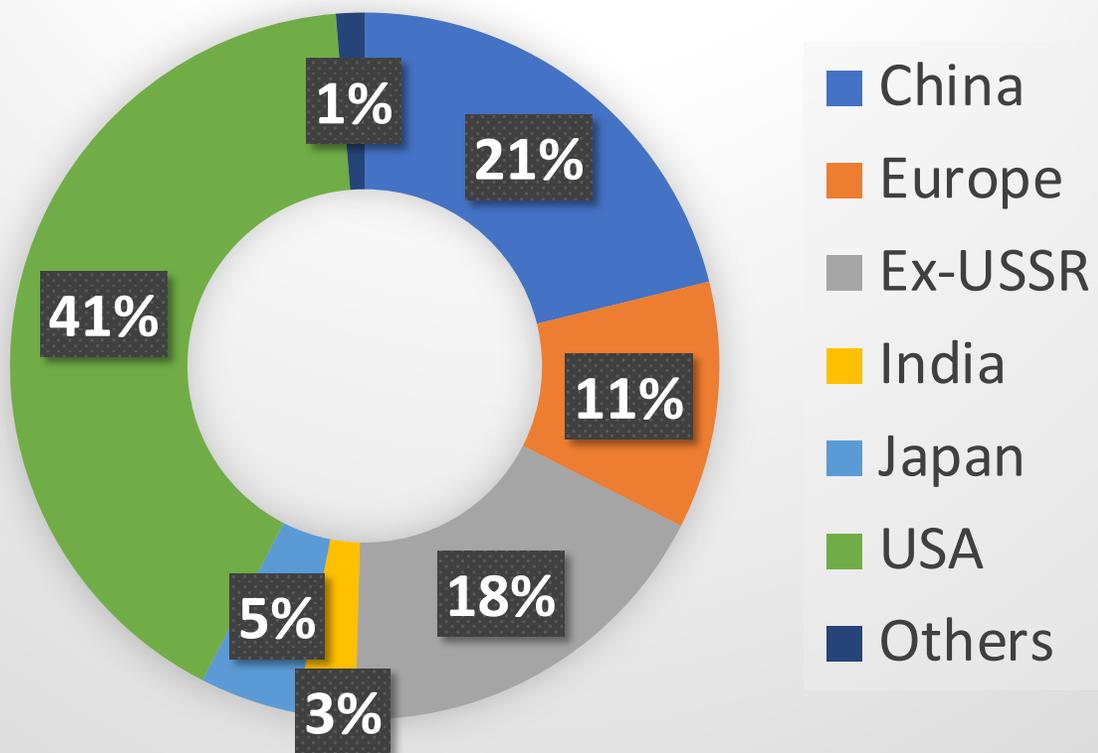


Global Space Activity in 2019

Global Spacecraft Production by region (tons)

Global Launch Activity by Launcher Region (tons)

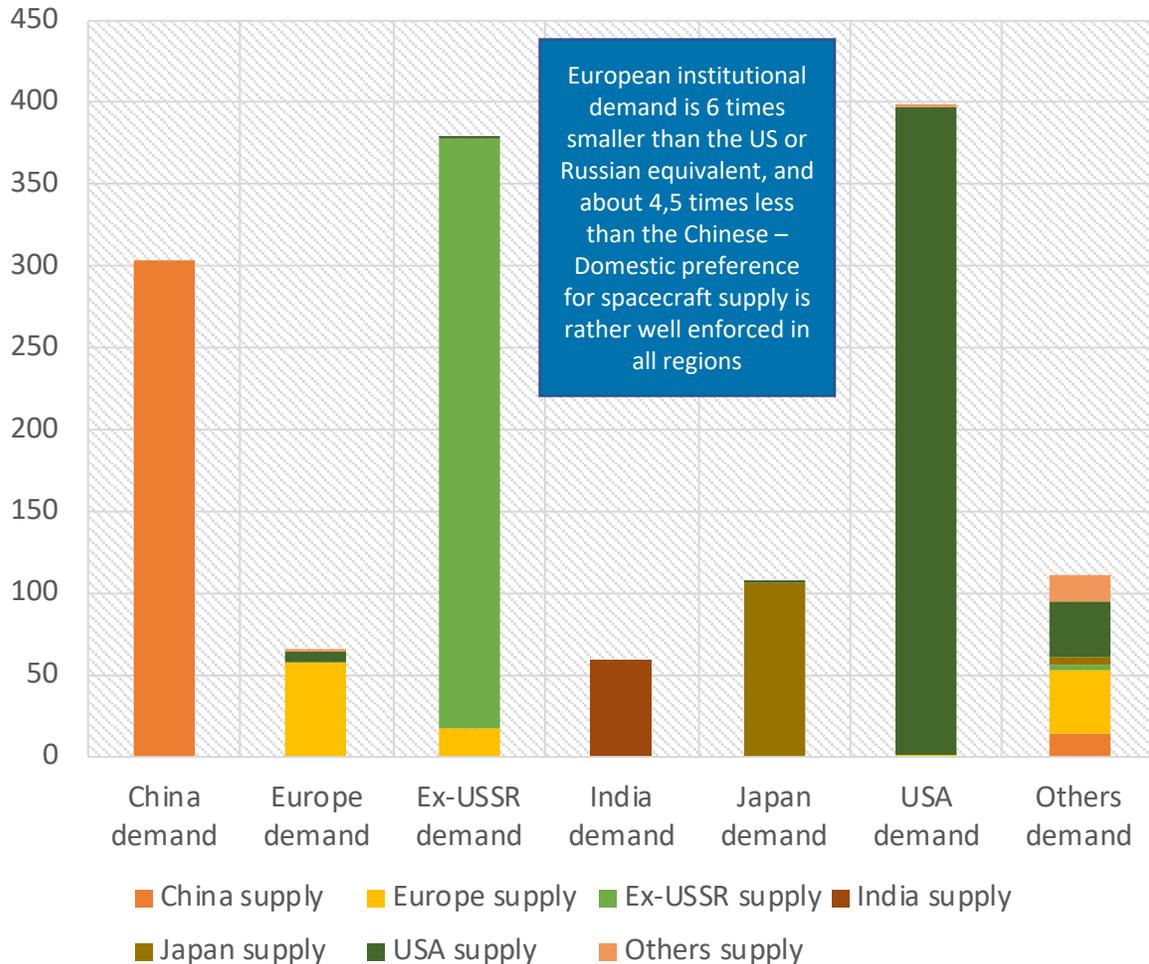
Europe is the 4th space power



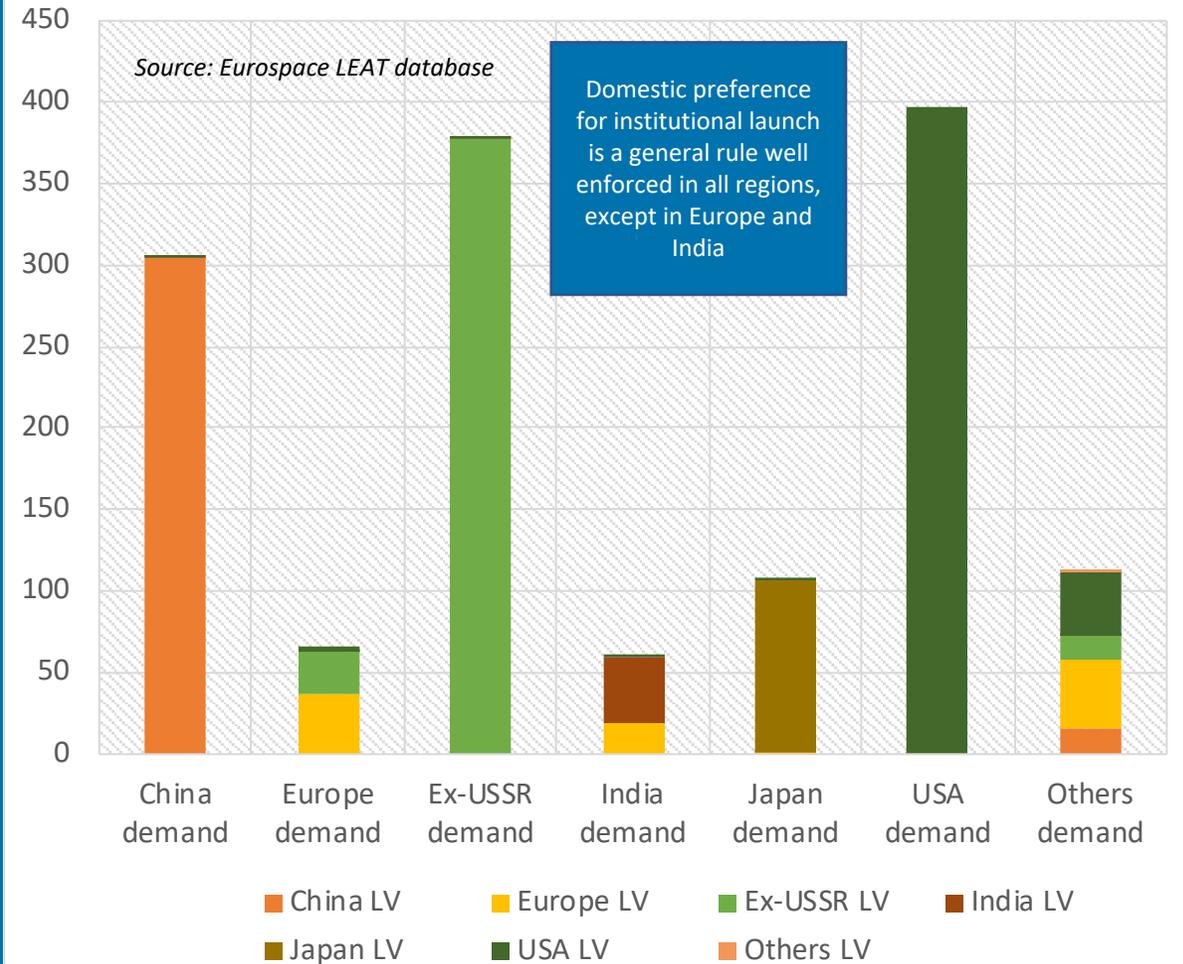
Source: Eurospace LEAT database

Institutional demand, enforcing domestic preference worldwide

Institutional spacecraft demand and supply (2015-2019, tons)

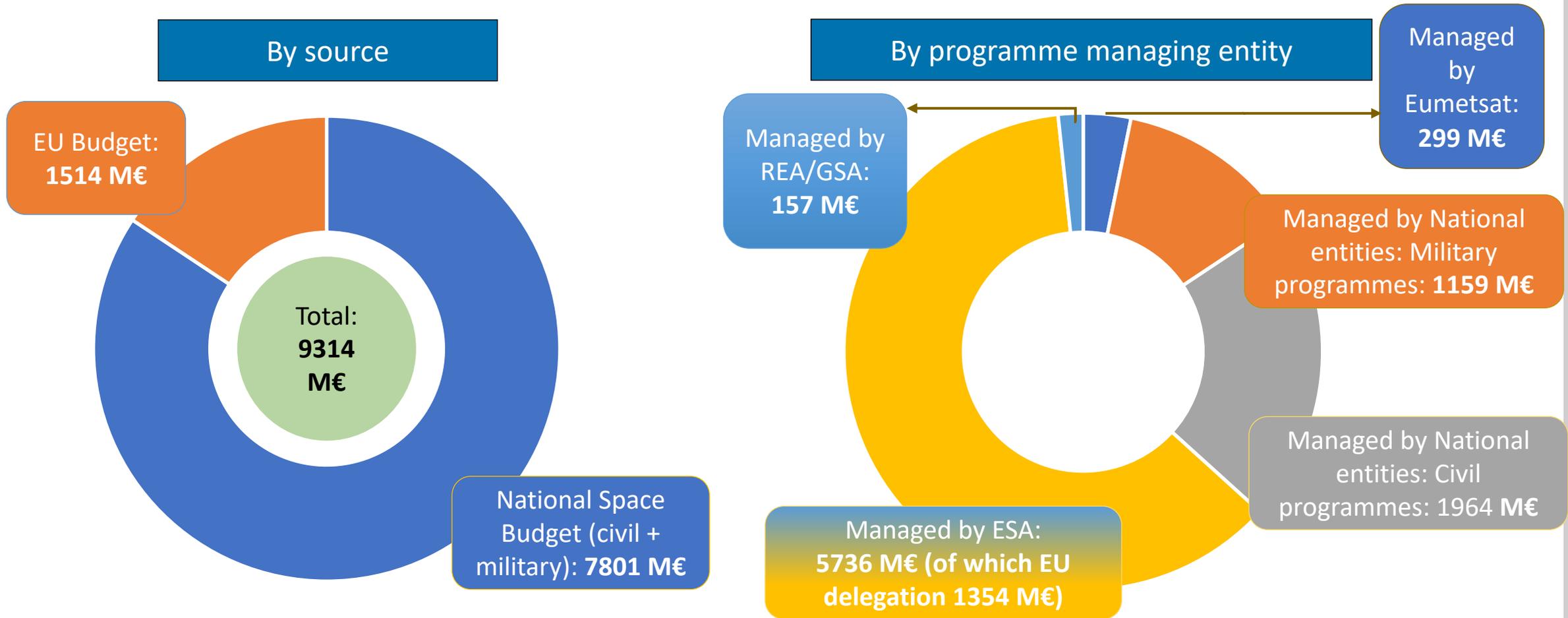


Institutional launch demand and supply (2015-2019, tons)



The European space budget

European Space (upstream) Budget 2019



Source: Eurospace analysis

Primary data: ESA, CNES, ASI, DLR, UKSA, ESTEMP, EC...

The European space industry

2020 Release of Eurospace facts & figures

The space manufacturing industry

- **The space manufacturing industry**, a strategic sector embedded in the larger aerospace and defence industry, designs, develops and builds space systems launchers, spacecraft and the related professional ground segment for public and private customers in Europe and across the Globe.
- **The space industry is at the higher end of an important value-added stream of commercial and public/strategic services.** Space value-added services and their ground segment users (e.g. Copernicus, Galileo, Broadcast and broadband services, geo-information...) generate socio economic benefits and support the development of Europe.
- According to standard definitions the space manufacturing activities do not include service activities such as that of satellite operators (Eutelsat, Inmarsat...) or launch service providers (Arianespace). These entities are customers to the manufacturing industry.
- **The Eurospace annual survey measures European space manufacturing industry revenues and employment. It is supported by all major companies, and is representative of the sector situation.**

Survey representativeness

Survey statistics	Nb of units	Final sales M€	Space empl.
All units in the model	342	8746	47906
Units updated	144	6342	36392
Proxies	198	2405	11514
Survey representativeness	42%	73%	76%

Main industry facts

Key figures employment (FTE) and sales (M€)	2017	2018	2019	Var.
Direct industry employment (FTE)	44036	45320	47906	5,7%
Other personnel working on site (FTE)	2658	2940	2256	-23,3%
Total space industry employment (FTE)	46694	48260	50162	3,9%
Final sales (M€ current e.c.)	8769	8525	8747	2,6%

Final sales by main customer segment (M€)

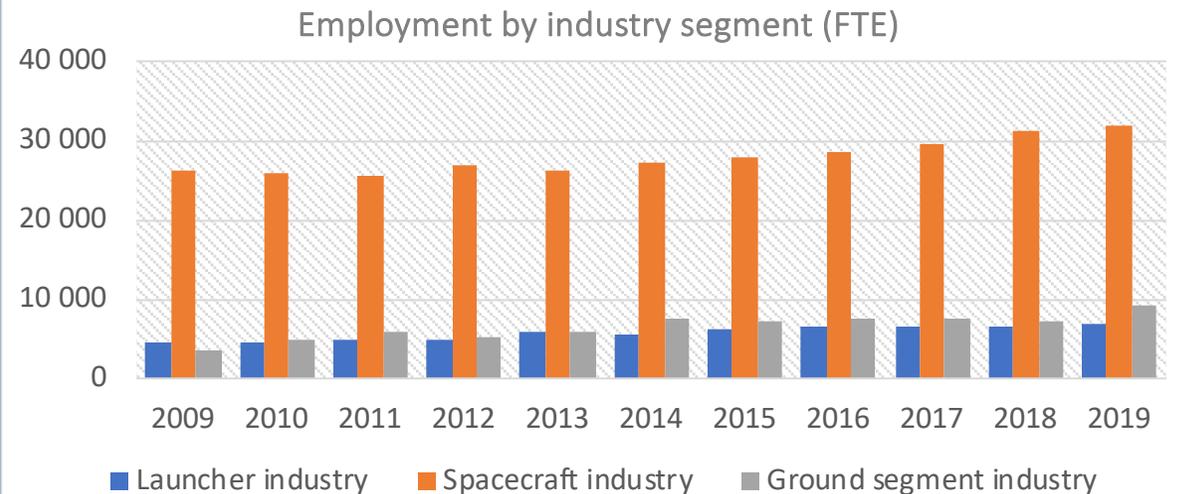
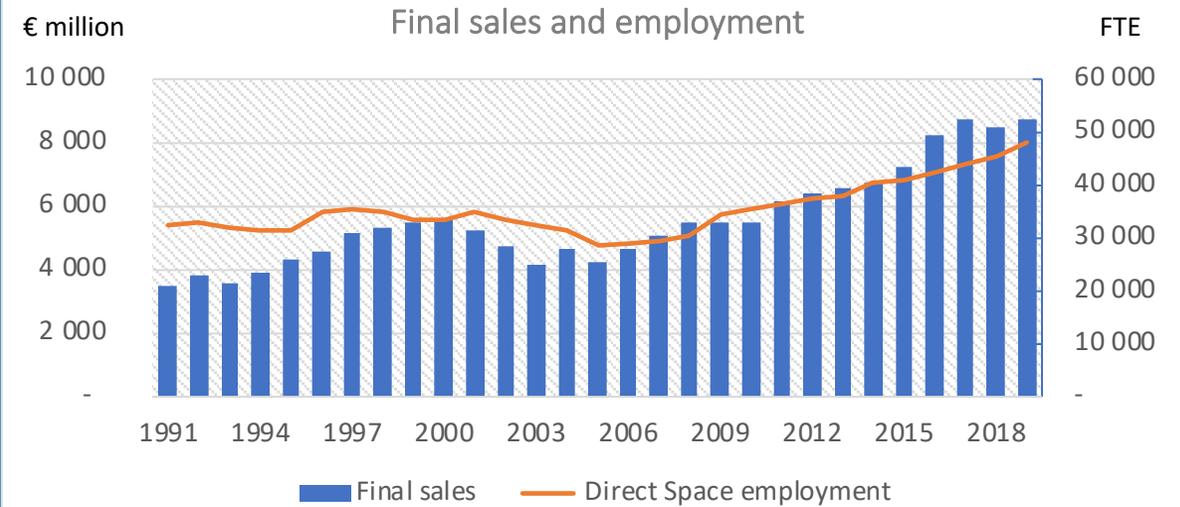
(M€)	2017	2018	2019	Var.
Final sales (M€)	8769	8525	8747	2,6%
European public customers	5059	5446	5506	1,1%
European private customers	1825	1520	1614	6,2%
Unknown European customers	90	99	109	10,6%
Public customers RoW	808	593	696	17,4%
Private customers RoW	906	810	771	-4,8%
Unknown customers RoW	80	57	50	-12,6%

Final sales by main product segment (M€)

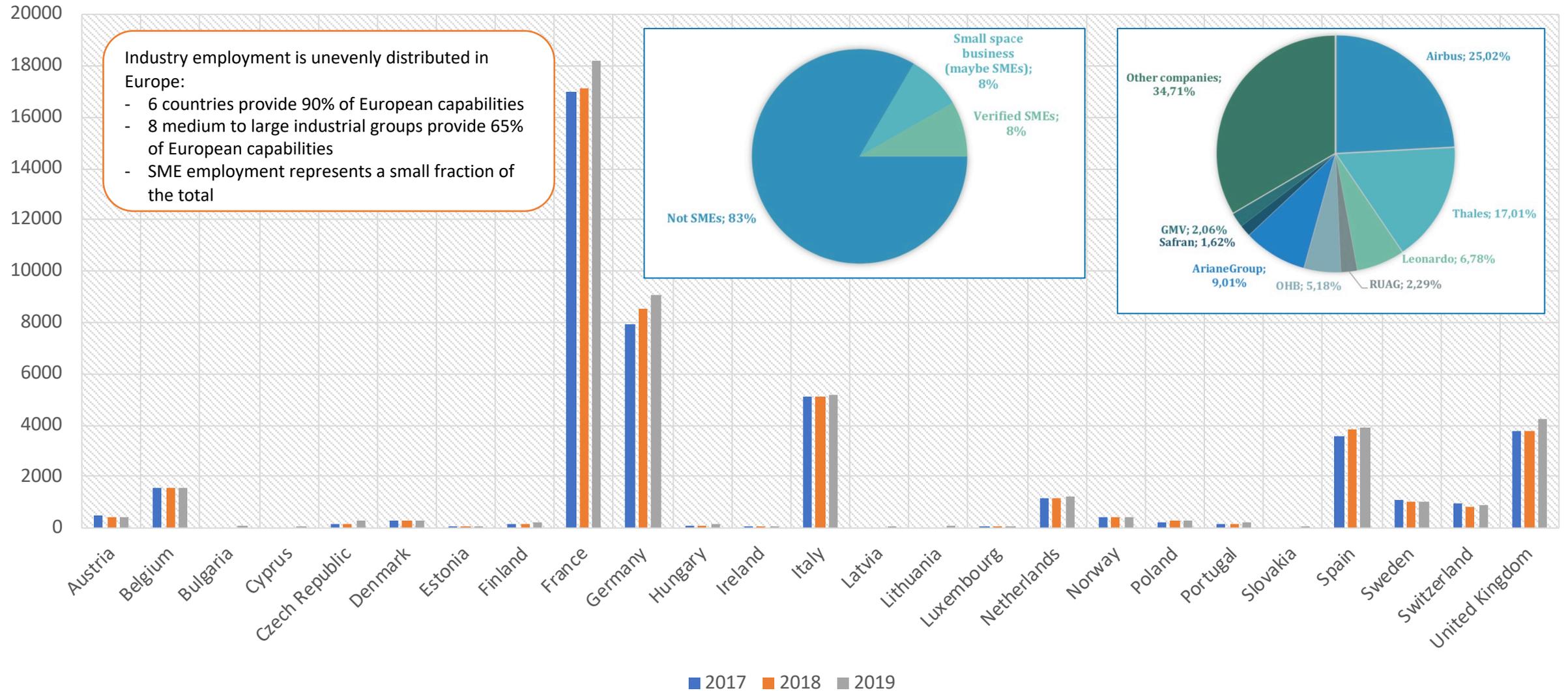
(M€)	2017	2018	2019	Var.
Final sales (M€)	8769	8525	8747	2,6%
Launcher systems	1709	1677	1712	2,1%
Satellite applications systems	4248	3813	4171	9,4%
Scientific systems	1117	1290	1006	-22,1%
Ground systems and services	1405	1509	1694	12,3%
Other & Unknown	290	236	165	-30,0%

European space industry sales & employment

- This chart presents the evolution of the European space systems sales (in current e.c.) and employment (in Full Time Equivalents) in the past decade.
 - Note that Eurospace measures industry sales to final customers invoiced in the year. This measure ensures that intermediate sales are eliminated to avoid double counting.
 - Note that Eurospace measures personnel in Full Time Equivalents (FTE) involved in the production of space systems, a different figure than company headcount.
- **Industry posted final sales worth 8.7 B€ (+2,6%) in 2019**
 - In 2019 the revenues from institutional European programmes have continued the growth trend observed since 2010. The growth was supported by satellite applications and launcher segments. Science business is in decrease since 2 years now.
 - European Institutional programmes provided 63% of European industry revenues.
 - In 2019 commercial and export segments revenues have almost regained their level of 2017, after the serious drop of 2018. As usual this market segment is mostly supported by telecommunications systems, and to a lesser extent, by observation systems.
 - Commercial and export sales represented 37% of industry revenues.
- **Direct industry employment 48 kFTE (+5,7%).**
 - Women represent an average 22 % of industry employment, with a qualification structure similar to men.
 - The European space industry workforce represents about 5-6% of the worldwide space industry workforce (dwarfed by Russia, China and the USA that boast more than 150k FTE each).
- The European manufacturing sector has experienced a steady growth of sales in the past decade, supporting a similar trend in employment growth, indeed, although the sector is very capital intensive, more business usually requires more workforce.
 - This trend may change with the growing recourse to automation of tasks in space system manufacturing and assembly, and also due to the rationalisation efforts of industry, which have been very strong in the past years, in pursuance of more efficiency and improved economic outturn.
 - This trend allowed industry to significantly improve the labour productivity in the past decades (from 100k€/worker in 1991 to almost 200k€/worker in 2019)

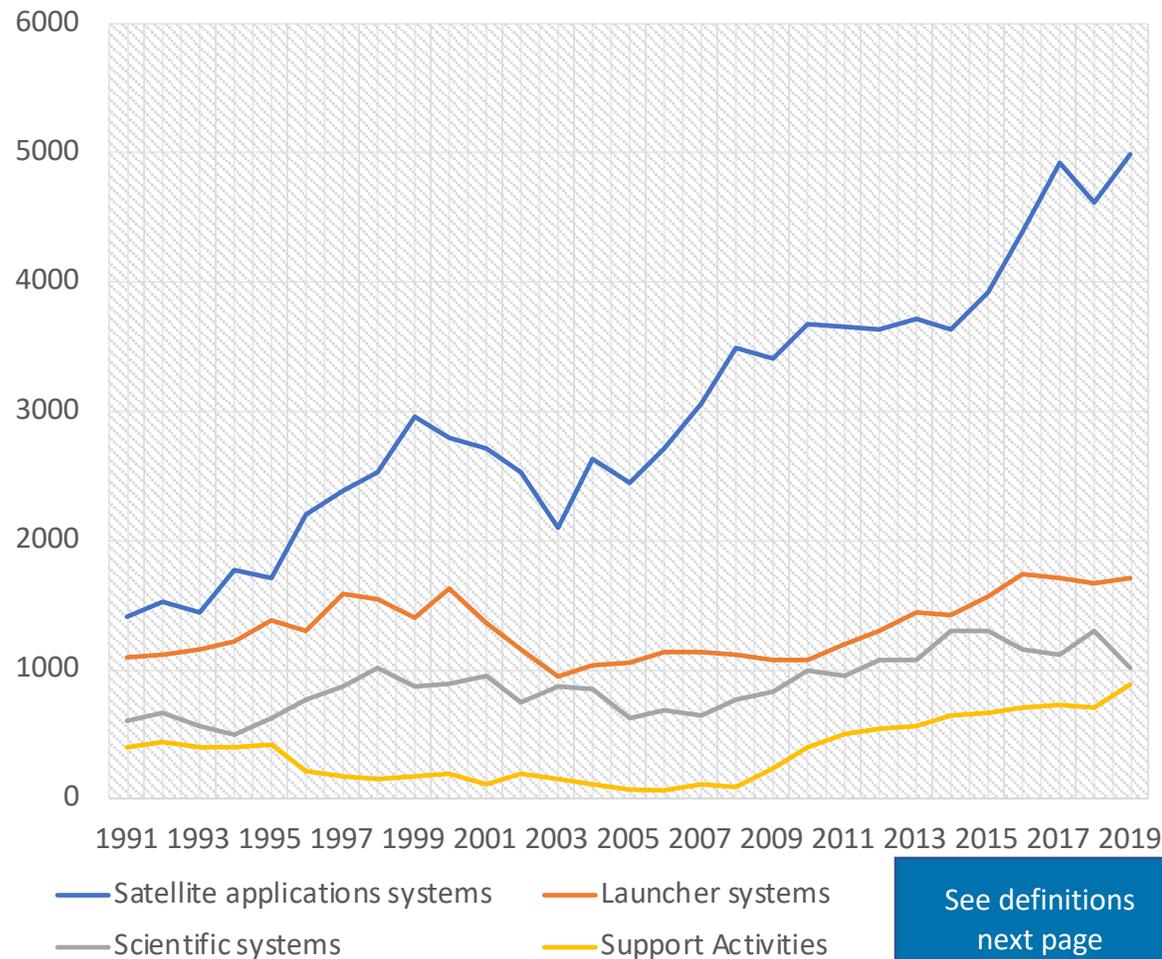


Industry Employment by country and by company (FTE)

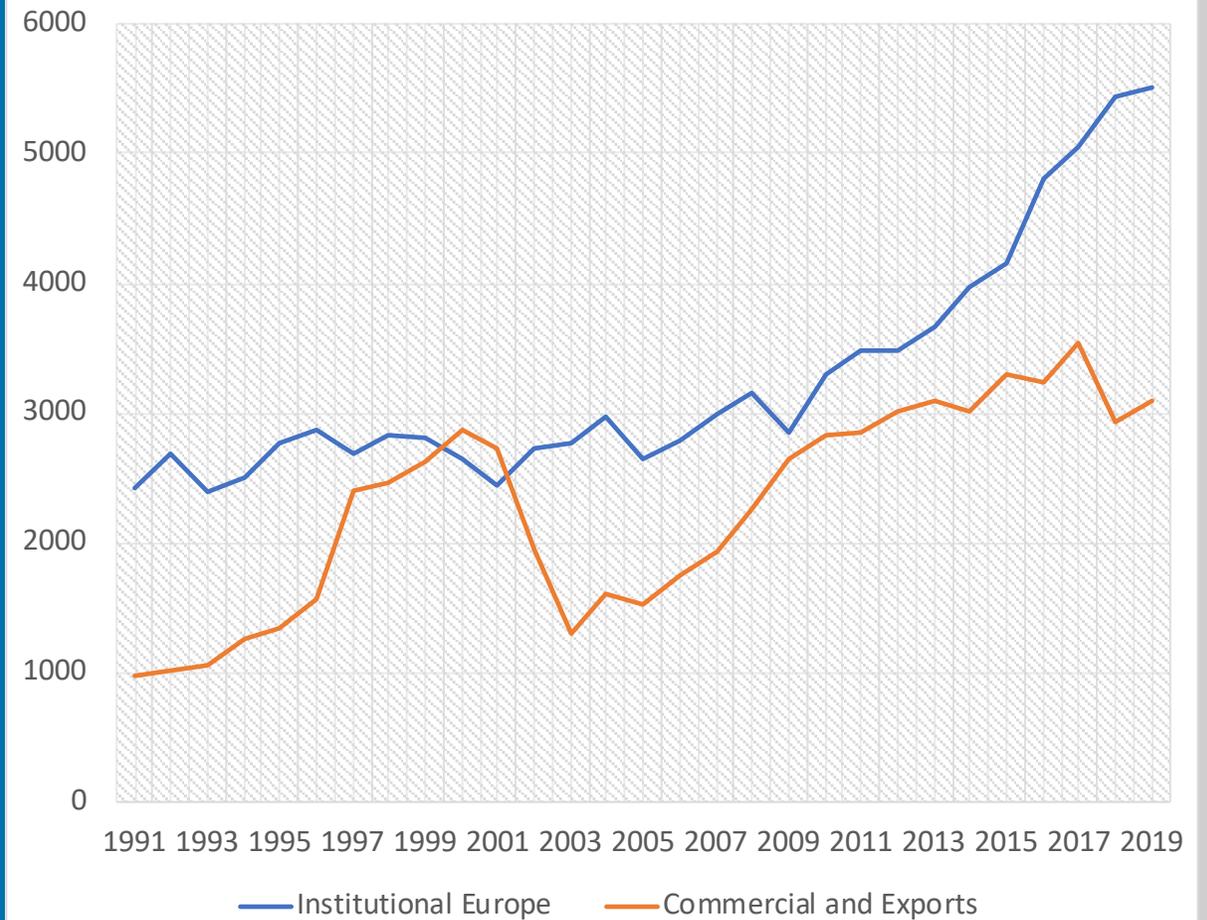


Sales by main customer segment

Sales by main product segment M€



Sales by main customer segment M€

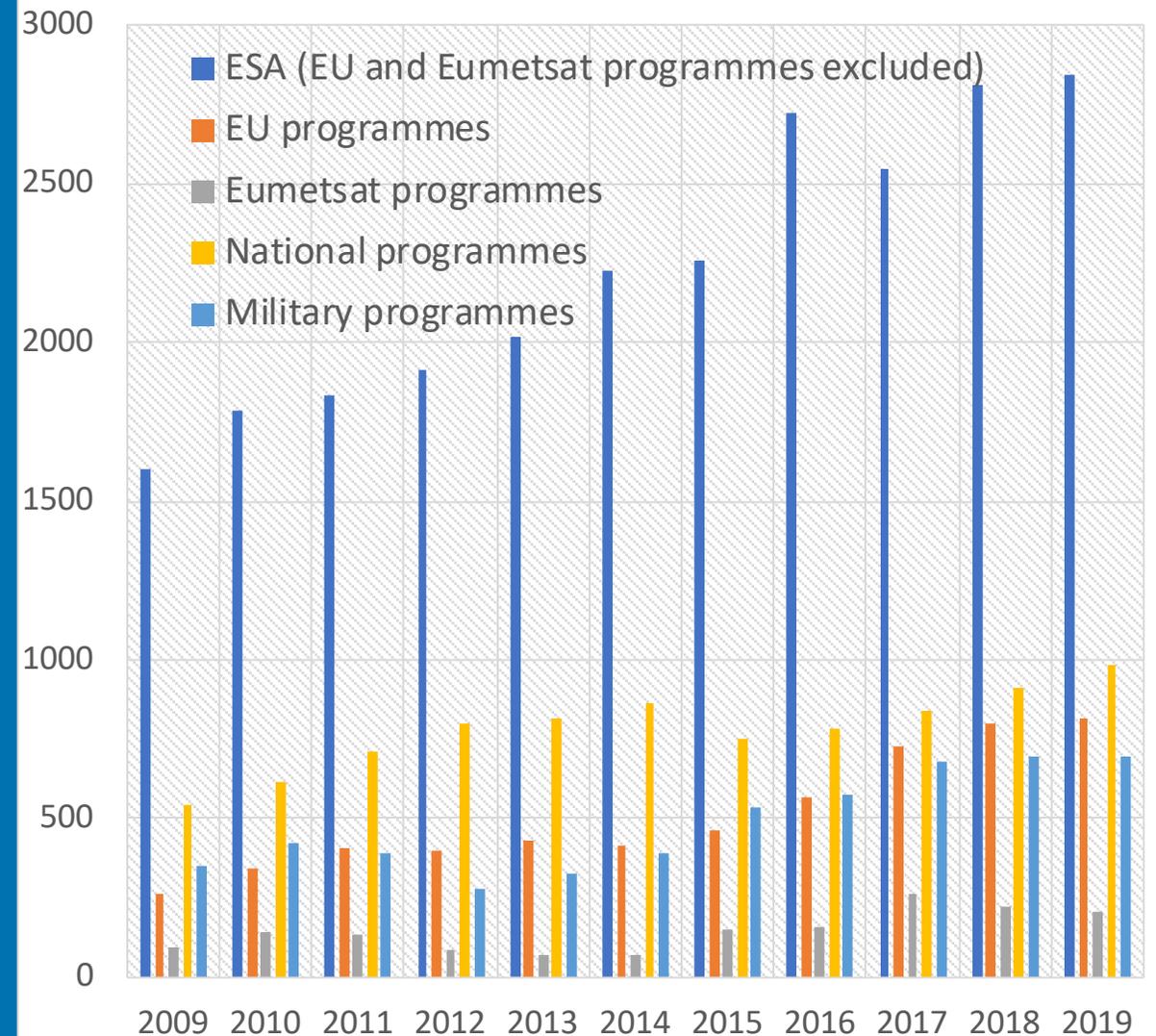


Product Segments definitions

- Satellite applications include all sales related to the development and production of systems for future and actual missions in telecommunications, Earth observation and navigation/positioning. Most of the revenues are drawn from the production of operational systems, while a smaller share is associated to technology and system development activities. In the specific frame of long series, satellite applications also include the value of ground systems (control centres, ground antennas etc.). These figures do not include the revenues drawn from satellite operations.
- Launcher systems include all sales relevant to the design, development and production of launcher systems. European launcher systems include the large Ariane system, in operations since 1996, and the smaller VEGA system, in operations since 2012. A small fraction of these revenues is associated to the exports of launcher equipment (e.g. thrusters, fairings) used on non-European launchers. These figures do not include the revenues drawn from launch operations.
- Scientific systems sales include all sales relevant to the design, development and production of scientific spacecraft systems. These spacecraft address missions such as: human spaceflight, planetary exploration, Earth science, astronomy, etc. Almost all of these revenues are associated to government programmes.
- Support activities include all activities required to support the design, development and production of space systems. This category includes a share of hardware and a share of services sales. Hardware sales are associated to the production of electric and mechanical ground segment equipment (EGSE & MGSE) i.e. dedicated equipment required for the test and integration activities of equipment, subsystems and complete systems. Services sales are associated to the delivery of engineering, test and other specialised services to the space manufacturing industry and space systems customers. These services sometimes include also ground control centre operations, in particular for space agencies.

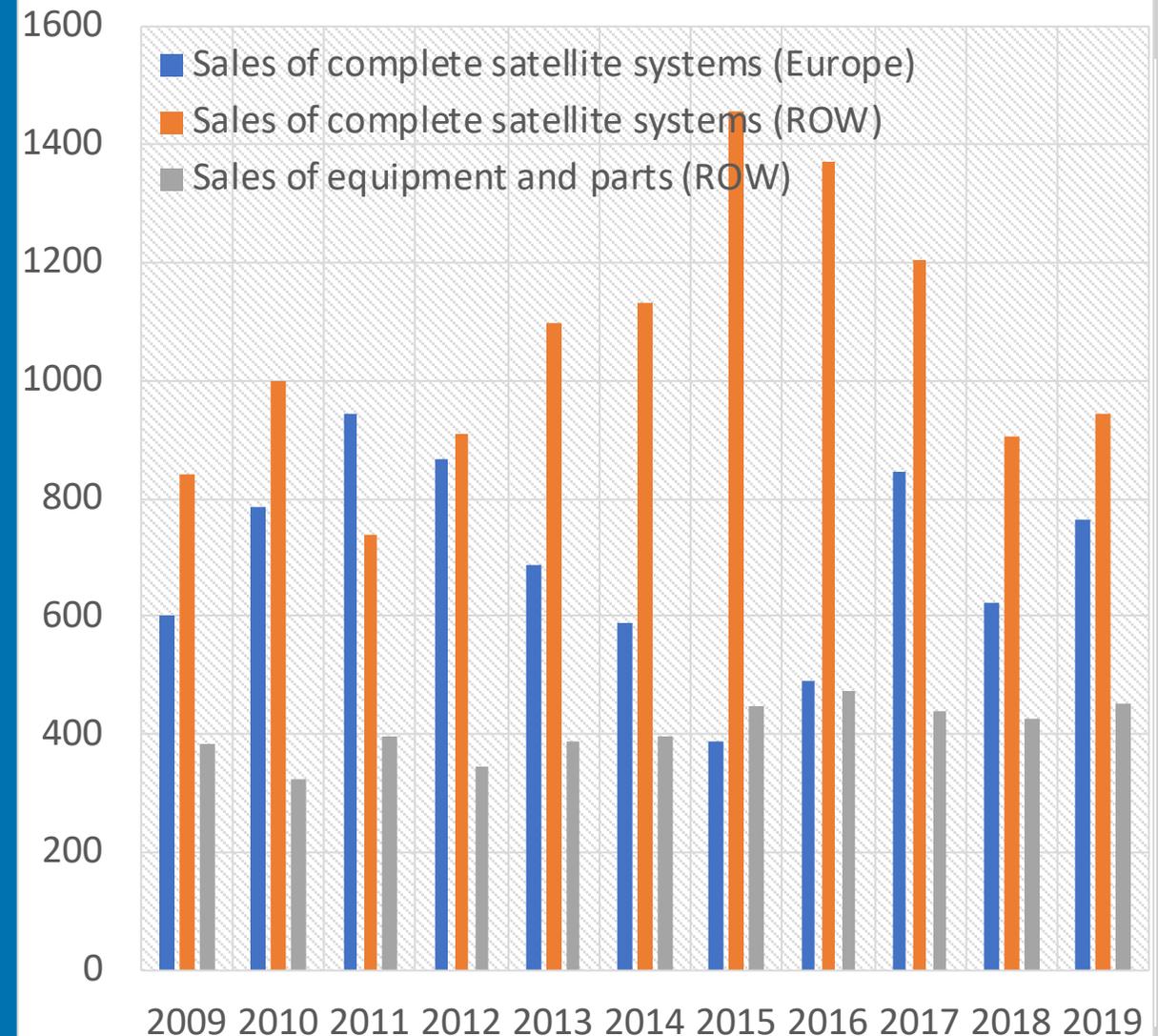
European institutional markets and programmes M€

- This chart presents the situation of revenues from the main European Institutional programmes
- The European institutional market segment is still growing in 2019 thanks to a sustained demand coming from ESA, the EU and the national civil programmes.
 - Institutional programmes generated 5,5 B€ of revenues in the European industry
 - ESA programmes remain the main revenue source for the European industry: 2,8 B€, or 51% of segment revenues
 - Revenues from National programmes (civil and military) are also in growth, worth 1,7B€, or 30% of segment revenues
 - EU programmes (mainly Copernicus and GNSS) represent 0,8B€ or 15% of revenues.
- The chart identifies separately ESA, EU and Eumetsat programmes, but most system procurement activities relevant to these programmes are managed by ESA.
 - Programmes managed by ESA represented 3,6B€ in 2019, i.e. 66% of this segment revenues in 2019.



Commercial satellite and ground market segments

- After a worrying drop in value in 2018, in 2019 the three main commercial spacecraft market segments have shown some resilience.
 - The market for complete systems to commercial customers in Europe at 763 M€ is worth 35% of segment revenues
 - This segment's sales are mostly composed of telecommunication spacecraft systems (641 M€)
 - Ground segment and ground services represent 10% of the segment revenues (79 M€)
 - The market for complete systems exports has stabilised after a 4 years of decrease, at 942 M€, worth 44% of segment revenues.
 - About two third of this segment revenues are provided by telecommunications systems, the remaining third is provided by observation systems.
 - Ground segment and ground services represent 16% of the segment revenues (149 M€)
 - The exports of spacecraft and ground systems parts are very stable in time and, with 453 M€, are worth 21% of segment revenues.



Launcher segment market

- The European industry produces two launchers lines: Vega and Ariane.
 - Both are launched at CSG by Arianespace (which also operates for the Russian Soyuz launcher).
 - The industrial sector develops and manufactures the launcher systems, produced in batches and delivered for integration and operations in Kourou. The launcher segment revenues are very strongly related to Arianespace performance on the launch services market.
- The launcher systems market is almost exclusively European.
 - This market is shared between institutional customers (mainly ESA) who fund the development and the system consolidation activities, and commercial customers (mainly Arianespace) who procure operational launcher systems by batches.
 - Revenues from development programmes, funded by European institutional customers (mostly ESA) are in growth supported by the ongoing developments for the next launcher generations (Ariane 6 and Vega C)
 - Revenues from operational systems have slightly slowed down in 2018 and again in 2019, but the activity still remains sizeable.
- The structure of revenues from launch services generated by Arianespace operations of Vega and Ariane 5 (Soyuz excluded) is very different, with most of the business being associated to commercial and export customers.
 - In 2019, Arianespace launched about 3 times more for commercial and exports customers than for European institutional customers. The important exposure to commercial and export customers has always been a staple of Arianespace.
 - The European launch system economy is strongly dependent from the commercial launch market. The uncertainties and reduction of demand for large GEO satellites have an impact on the European launcher ecosystem.

