Current space economy statistics and priorities for the future

BEA Space Economy Measurement Workshop

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U.S. DEPARTMENT OF COMMERCE

Measuring the economy using supply and use tables

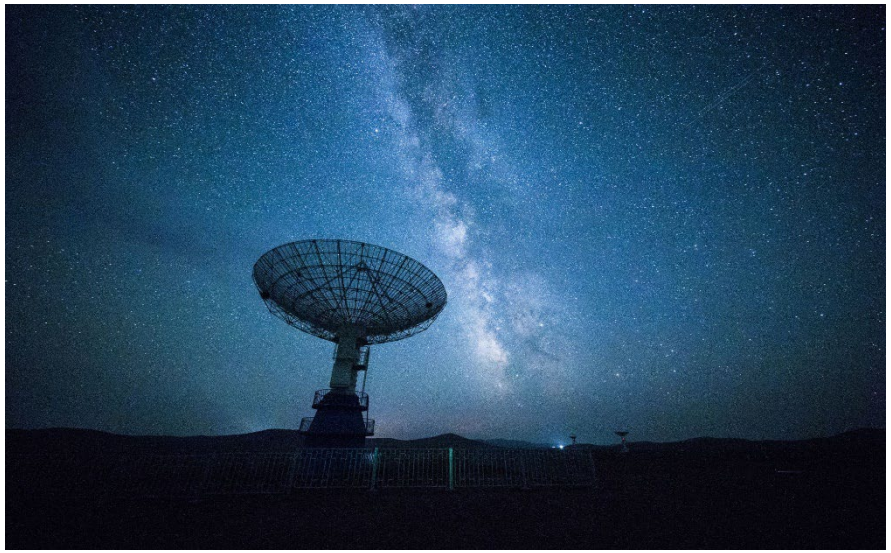
The Supply Table, 2017 [Millions of dollars] Bureau of Economic Analysis					
	Industry				
Product	Aircraft manufacturing	Aircraft engine and engine parts manufacturing	Other aircraft parts and auxiliary equipment manufacturing	Guided missile and space vehicle manufacturing	Propulsion units and parts for space vehicles and guided missiles
Aircraft manufacturing	134,002	0	587	0	226
Aircraft engine and engine parts manufacturing	145	42,913	129		28
Other aircraft parts and auxiliary equipment manufacturing	6,854	78	33,666		38
Guided missile and space vehicle manufacturing	110	0	0	16,643	267
Propulsion units and parts for space vehicles and guided missiles	5	0	1	144	7,080

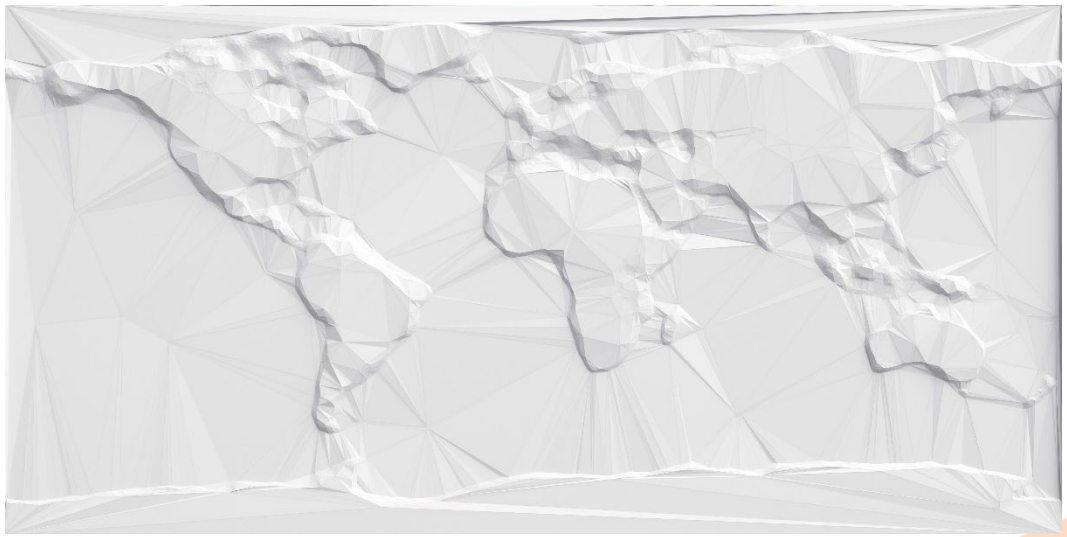
Source: BEA Input-Output Accounts Data, https://www.bea.gov/industry/input-output-accounts-data

What is the Space Economy?

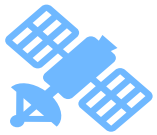
The space economy consists of goods and services that:

1. Are used in space, or directly support those used in space *(such as space vehicles, launch pads, insurance)*
2. Require direct input from space to function, or directly support those that do *(such as GPS transmitters, satellite telecommunications and broadcasting)*
3. Are associated with studying space *(such as R&D, planetariums)*





What is the Space Economy?

Space Economy Industries and Products		
Manufacturing, Wholesale trade, and Retail trade	Space vehicles, space weapons, satellites, ground equipment, search, detection, navigation, and guidance systems (GPS/PNT equipment)	
Information	Telecommunications, broadcasting, software	
Government	Space-related military, civilian, federally funded research and development centers	
Professional and business services	Research and development, engineering and technical services, computer systems design, geophysical surveying and mapping services	
Construction	Space facilities, observatories, planetariums, satellite dish installation	
Other various services	Launch services, insurance, education, observatories, planetariums	

BEA's Space Economy statistics by industry

- Gross output, current dollar and chained dollar
- Value added (GDP), current dollar and chained dollar
- Private sector employment
- Private sector compensation

Table 1. Space Economy Gross Output by Industry
[Millions of current dollars]
Updated: June 27, 2023

Line		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
1	Space economy[1]	180,603	188,077	190,613	197,111	197,891	199,244	197,974	206,397	203,587	211,575
2	Private industries	151,275	158,593	160,298	165,691	165,884	167,280	164,171	168,691	165,232	170,772
3	Agriculture, forestry, fishing, and hunting	-	-	-	-	-	-	-	-	-	-
4	Mining	67	71	62	78	42	35	22	27	21	38
5	Utilities	2	2	1	4	3	3	2	2	2	2
6	Construction	364	329	509	606	607	892	567	1,841	1,765	1,073
7	Manufacturing	55,016	56,493	54,247	53,412	52,493	51,824	51,184	54,919	53,348	55,804
	Of which:										
8	Computer and electronic products[2]	32,028	32,324	29,397	29,698	30,427	30,399	29,434	31,247	30,345	31,012
9	Other transportation equipment[3]	18,896	19,479	20,419	20,861	19,155	18,867	18,866	21,159	20,612	21,999
10	Wholesale trade	23,193	24,931	26,385	29,272	30,987	33,296	34,609	33,373	34,244	38,645
11	Retail trade	318	509	656	837	1,405	1,162	1,484	2,366	3,395	3,502
12	Transportation and warehousing	1,676	1,528	1,374	1,326	1,340	1,391	1,691	1,353	1,270	1,320

Select takeaways from 2021 Space Economy statistics

- The space economy contributed $129.9 billion (0.6%) to US GDP
- Average compensation was $141,990 in the private sector, 1.75x higher than the US mean
- Manufacturing overtook Information as the largest sector in terms of gross output

Next steps & possible future research

- Summer 2024: New and updated space economy statistics published through **2022**
  - Full industry detail & price indexes

- Continue international collaborations to develop comparable statistics

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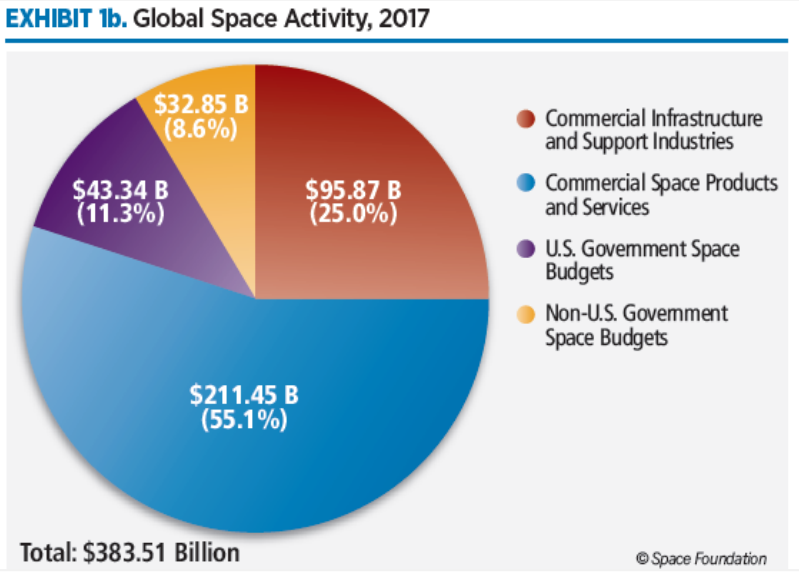
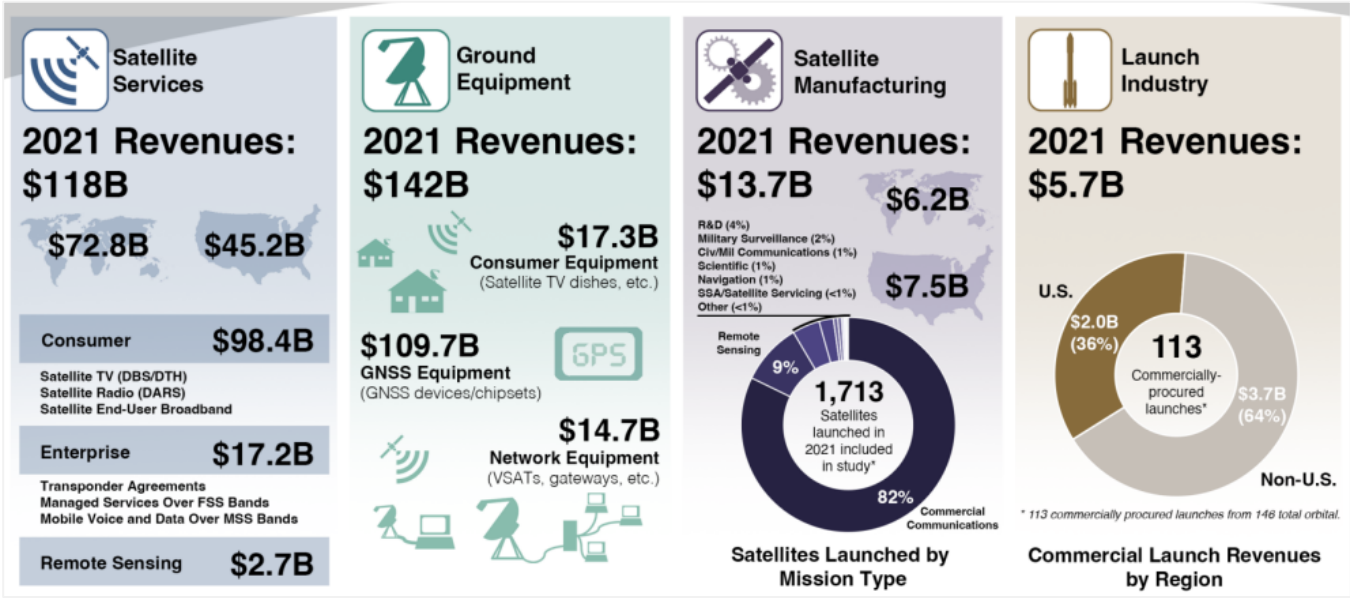
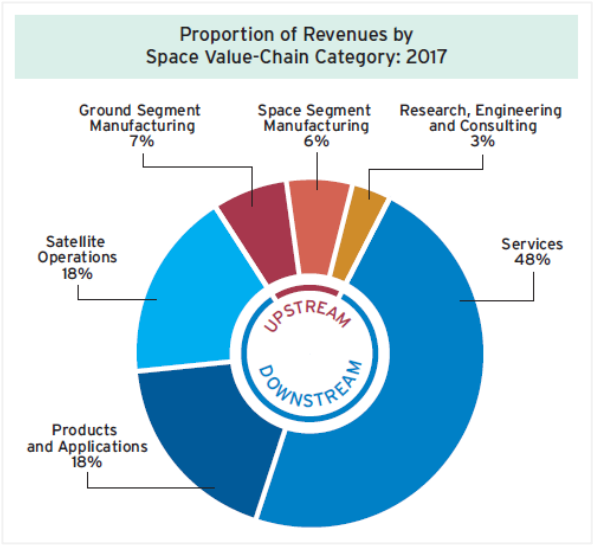
- Exploring improvements and expansions
  - Improved satellite manufacturing price indexes
  - Statistics by state
  - Statistics by space activity

Examples of space economy data by activity





Source: Satellite Industry Association



Source: Canadian Space Agency

Gross Proceeds	
$23.7	EO/Geospatial
$13.4	Space Hardware
8.9	Satcom
4.0	Space Hardware
2.0	Space Hardware

Source: Quilty Space

Discussion questions

1. What aspects of the space economy are most important for your organization to understand?

2. What areas of possible research should BEA prioritize?

3. What are the pros and cons of BEA publishing statistics for space activities that mirror categories from private reports?

4. There is a tradeoff between timely statistics and potentially large revisions—what aspect is more significant for your organization?

5. How valuable are state-level or historical (<2012) estimates compared to other possibilities?