

### 7. Space launch activities

Only a few countries in the world have the technology and facilities to carry out an orbital space launch, or to maintain a fleet of operational launchers. In 2014, this applies to eight countries (United States, Russian Federation, China, Japan, India, Israel, Iran and Korea) and the European Space Agency (ESA). Since 1994, more than 1 300 successful launches have been carried out, with the Russian Federation and the United States accounting for almost 75% of all launches. The launch industry is subject to strong yearly variations (due to the low number of launches per year, satellite life and replacement cycles, etc.). After a drop in the early 2000s, launch numbers are back at 1990s levels, mostly due to increased activity in the Russian Federation and in China, which now has the same number of yearly launches as the United States. In 2013, 78 successful launches were carried out: 31 Russian launches, 19 US, 14 Chinese and seven European. India and Japan had three launches each, and Korea's launch vehicle Naro-1 successfully placed STSAT-2C in orbit. There were three failed launches: one Russian, one Chinese and one commercial launch (Sea Launch).

As most institutional satellites are placed into orbit by national launchers, the market open to international competition is relatively small. It was about USD 2 billion in 2013, a 20% decrease compared to 2012. As of spring 2014, there were six companies able to commercially launch satellites to geostationary (GEO) orbit, which is the most profitable orbit, home to large commercial communications satellites. They include the European Ariespace company (the current market leader, with the Ariane 5 launcher), the Russian Federation's International Launch Services (Proton launcher), the United States' Lockheed Martin (Atlas V) and Boeing (Delta launchers), China Great Wall (Long March launchers) and Sea Launch, an international consortium (Norway, Russian Federation, Ukraine and United States). Other companies can launch satellites in lower orbits, most notably SpaceX (USA), which carried

out its first commercial launch in December 2013 with its Falcon 9. It is currently developing its Falcon heavy launch vehicle, with two commercial flights scheduled for 2015 and 2017. India's Polar Satellite Launch Vehicle (PSLV) has a long track record. India is also developing and has successfully tested a heavy-lift cryogenic engine for its Geosynchronous Satellite Launch Vehicle (GSLV) with the ambition to enter the commercial GEO launch market. Launch demand in the next 10 years is expected to remain robust, with stable or increasing demand from institutional and commercial actors driven primarily by growth in emerging economies.

#### Methodological notes

Data are based on the Federal Aviation Administration's Office of Commercial Space Transportation (FAA/AST) and other public sources. The data include worldwide orbital launch events that are conducted during a given calendar year.

#### Sources

US Federal Aviation Authority (2014), *Commercial Space Transportation: 2013 Year in Review*, Washington, DC, January.

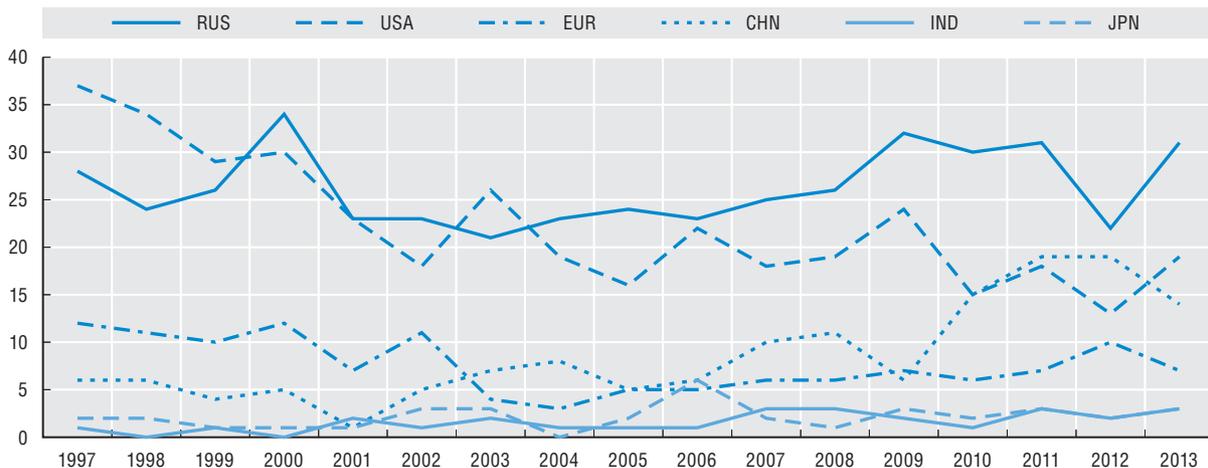
US Federal Aviation Authority (2013), *2013 Commercial Space Transportation Forecasts*, Washington, DC, May.

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#### Note

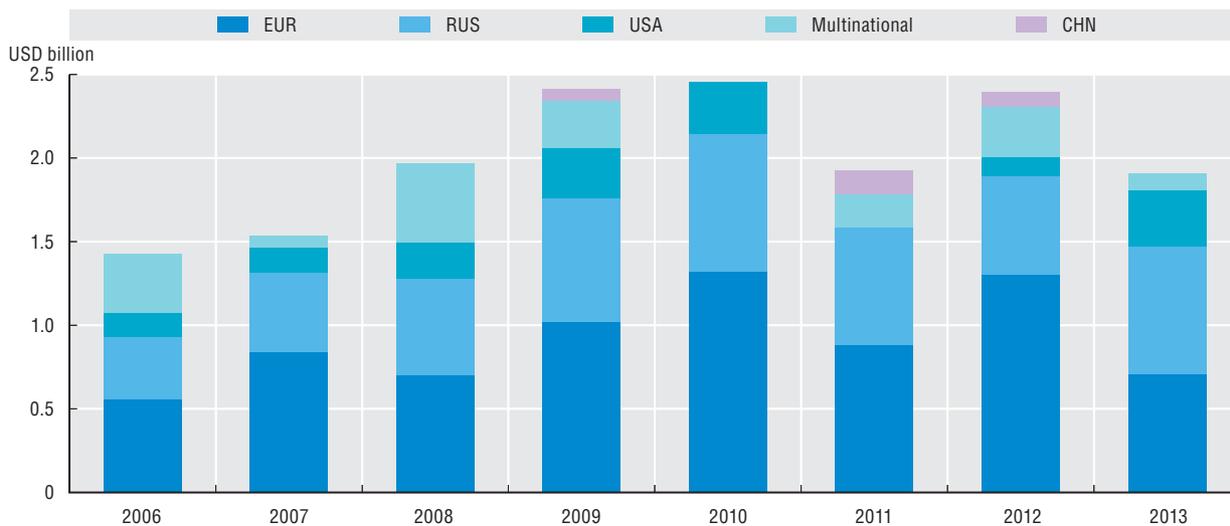
Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>.

### 7.1. Number of successful space launches for selected actors, 1997-2013



### 7.2. Launch industry revenues estimates

In USD billion (current), 2006-13



Source: Adapted from the US Federal Aviation Authority, 2014 and previous years



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