

Global Investments in R&D

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This fact sheet presents the latest UIS data on research and experimental development (R&D) available as of June 2020.

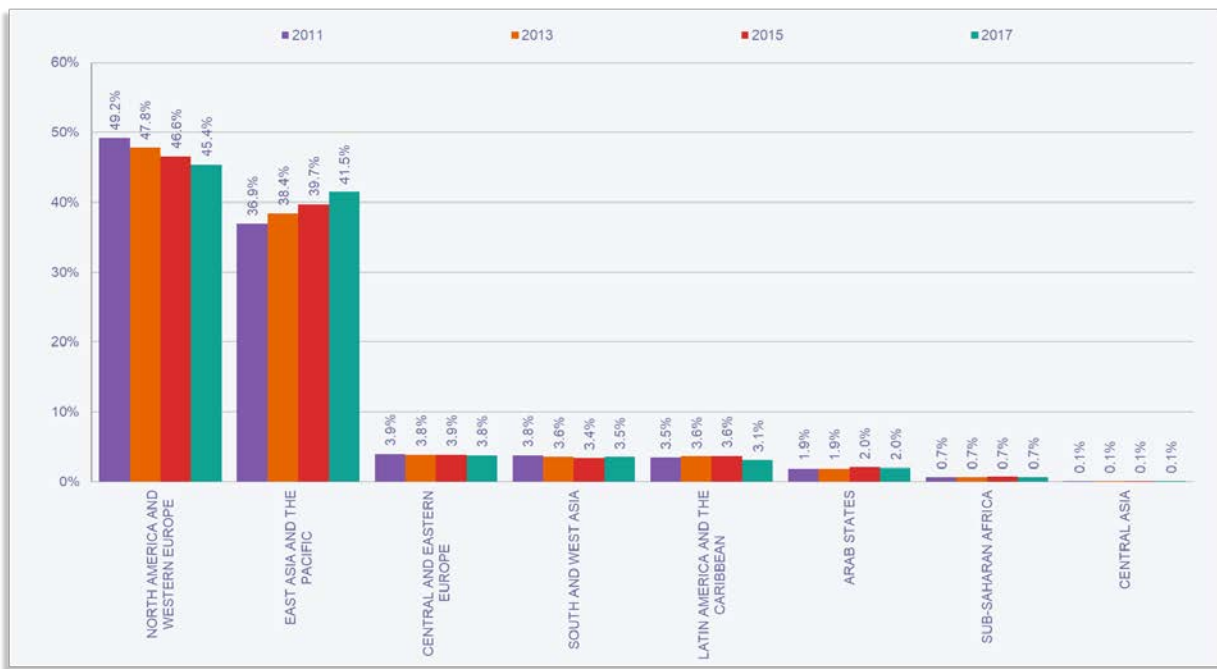
A snapshot of R&D expenditure

This fact sheet illustrates global and regional trends in the allocation of resources to research and experimental development (R&D). The UIS releases data on resources devoted to R&D once every year – in June.

The most commonly-used indicators to monitor resources devoted to R&D worldwide are gross domestic expenditure on R&D (GERD) expressed in purchasing power parity (PPP\$) and R&D intensity (percentage of gross domestic product (GDP) devoted to R&D activities). **Figure 1** presents the distribution of R&D expenditure by region.

Figure 1. Regional R&D investments

Shares of world R&D expenditure (GERD) by region, 2011, 2013, 2015 and 2017



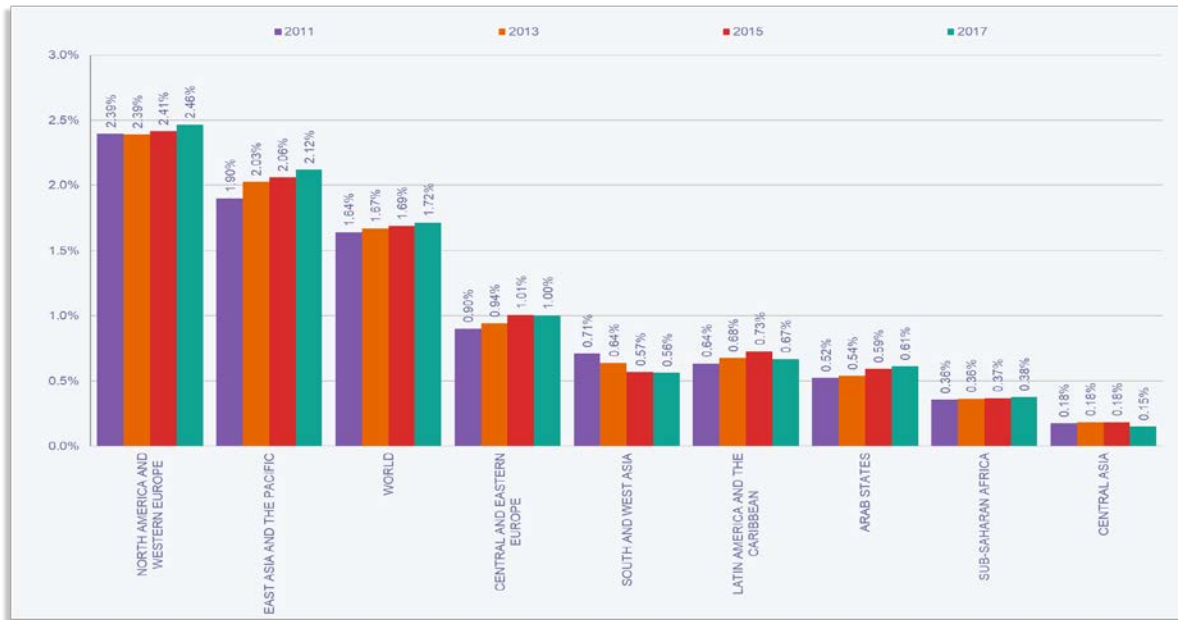
Source: UNESCO Institute for Statistics estimates, February 2020.



Figures 2 and 3 illustrate the distribution of R&D intensity by region. This indicator presents R&D expenditure relative to the size of the regional or national economy.

Figure 2. R&D intensity by region

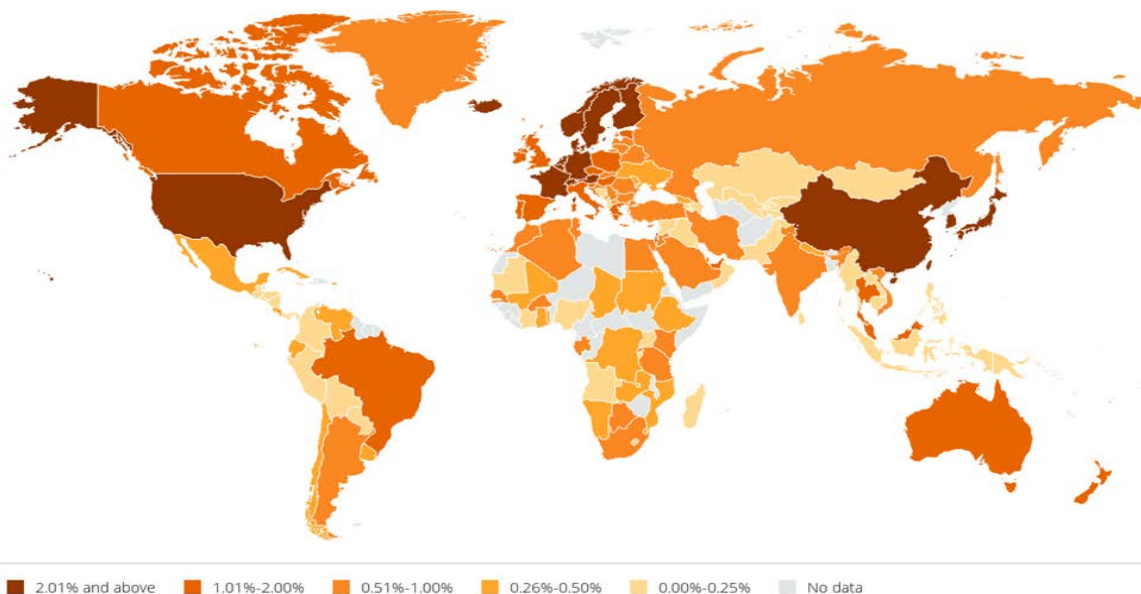
Gross domestic expenditure on R&D as a percentage of GDP by region, 2011, 2013, 2015 and 2017



Source: UNESCO Institute for Statistics estimates, February 2020.

Figure 3. Snapshot of R&D intensity

Gross domestic expenditure on R&D as a percentage of GDP, 2018 or latest year available



Source: UNESCO Institute for Statistics, June 2020.



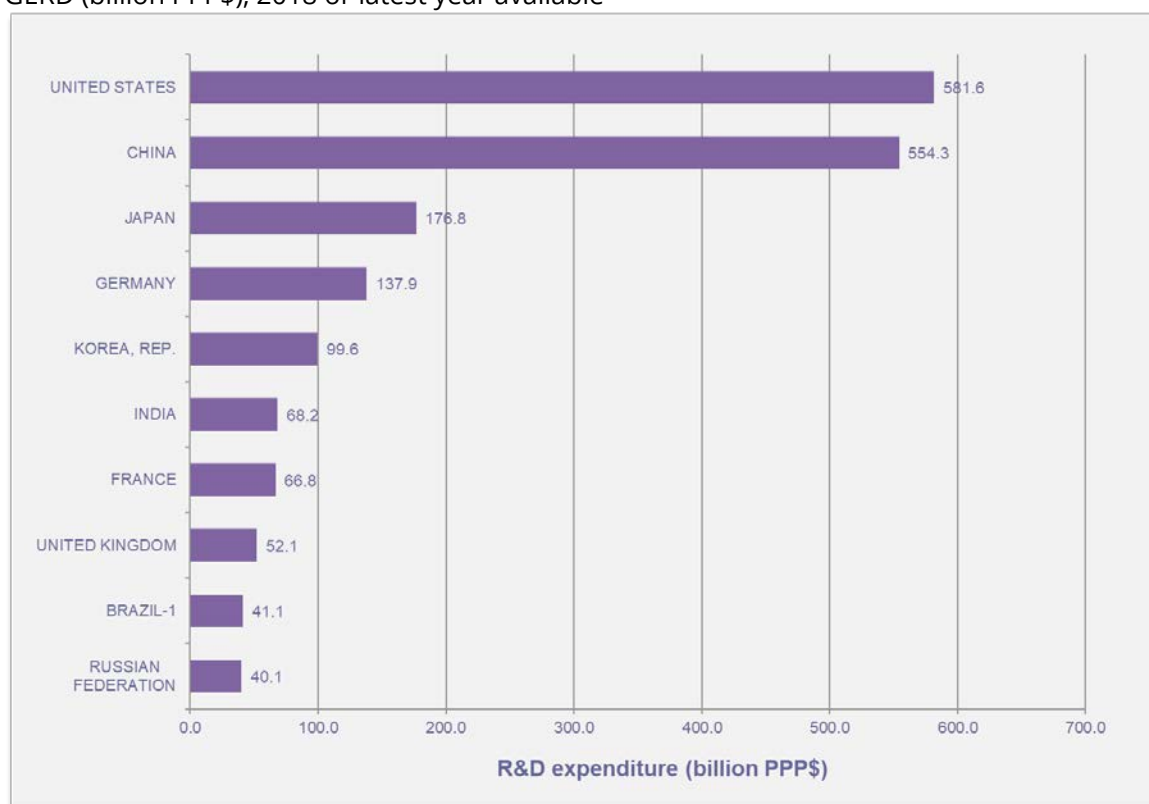
The 2017 regional averages for the share of GDP devoted to R&D activities are:

- 2.5% for North America and Western Europe
- 2.1% for East Asia and the Pacific
- **1.7% for World**
- 1.0% for Central and Eastern Europe
- 0.7% for Latin America and the Caribbean
- 0.6% for Arab States
- 0.6% for South and West Asia
- 0.4% for sub-Saharan Africa
- 0.2% for Central Asia

Figure 4 illustrates the world's top leaders in R&D expenditure, measured in PPP\$ for the latest year available. PPP\$ better reflects the real value of investments and allows for more comparability by eliminating differences in price levels among countries. Essentially, this means that a sum of money converted into US dollars at PPP rates will buy the same basket of goods and services in all countries.

Figure 4. World's top 10 leaders in R&D investment

GERD (billion PPP\$), 2018 or latest year available



Notes: -1 = 2017.

Source: UNESCO Institute for Statistics, June 2020.

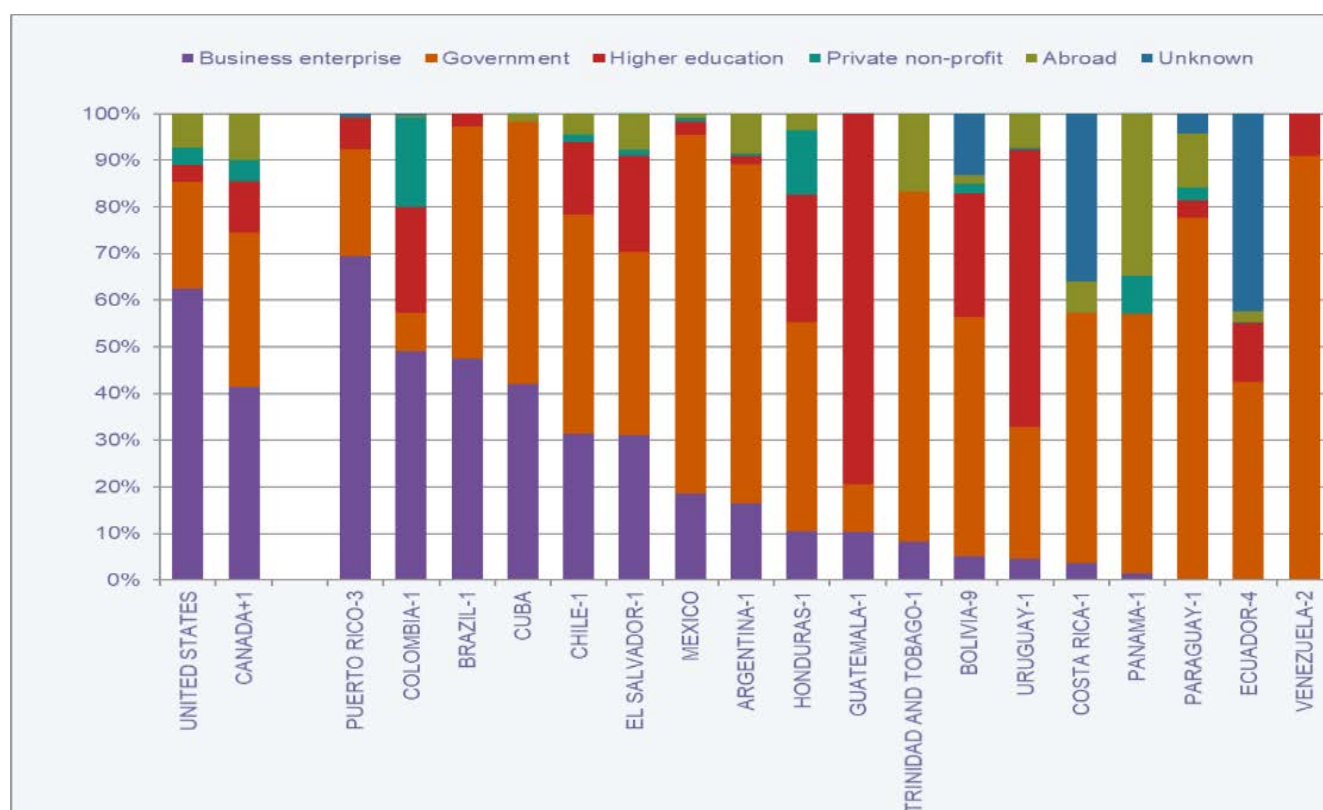


Which sectors invest the most in R&D?

Figures 5, 6 and 7 illustrate R&D expenditure broken down by source of funds. This refers to total gross intramural expenditure on R&D during a given period, financed by different sectors of the economy (business enterprise, government, higher education or private non-profit organizations) or from abroad (rest of the world), and expressed as a percentage.

Figure 5. Funding in the Americas

GERD by source of funds, 2018 or latest year available



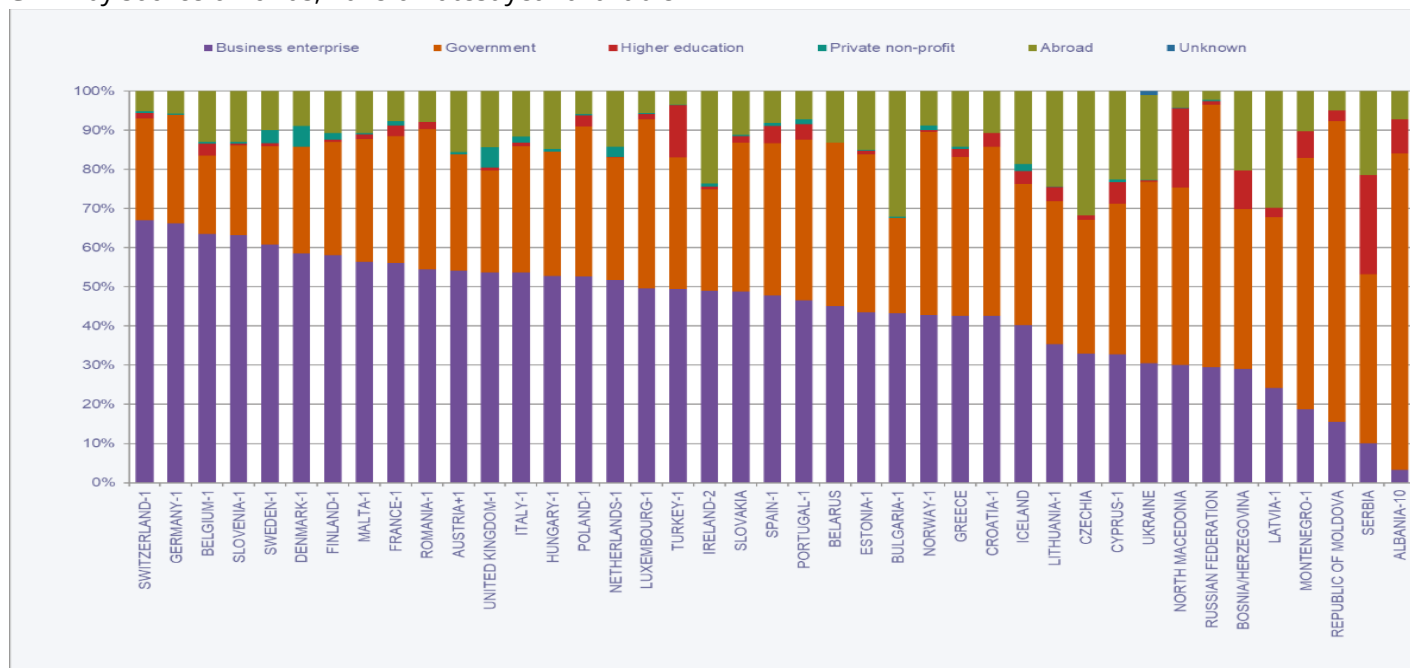
Notes: +1 = 2019, -1 = 2017, -2 = 2016, -3 = 2015, -4 = 2014, -9 = 2009.

Source: UNESCO Institute for Statistics, June 2020.



Figure 6. Funding in Europe

GERD by source of funds, 2018 or latest year available



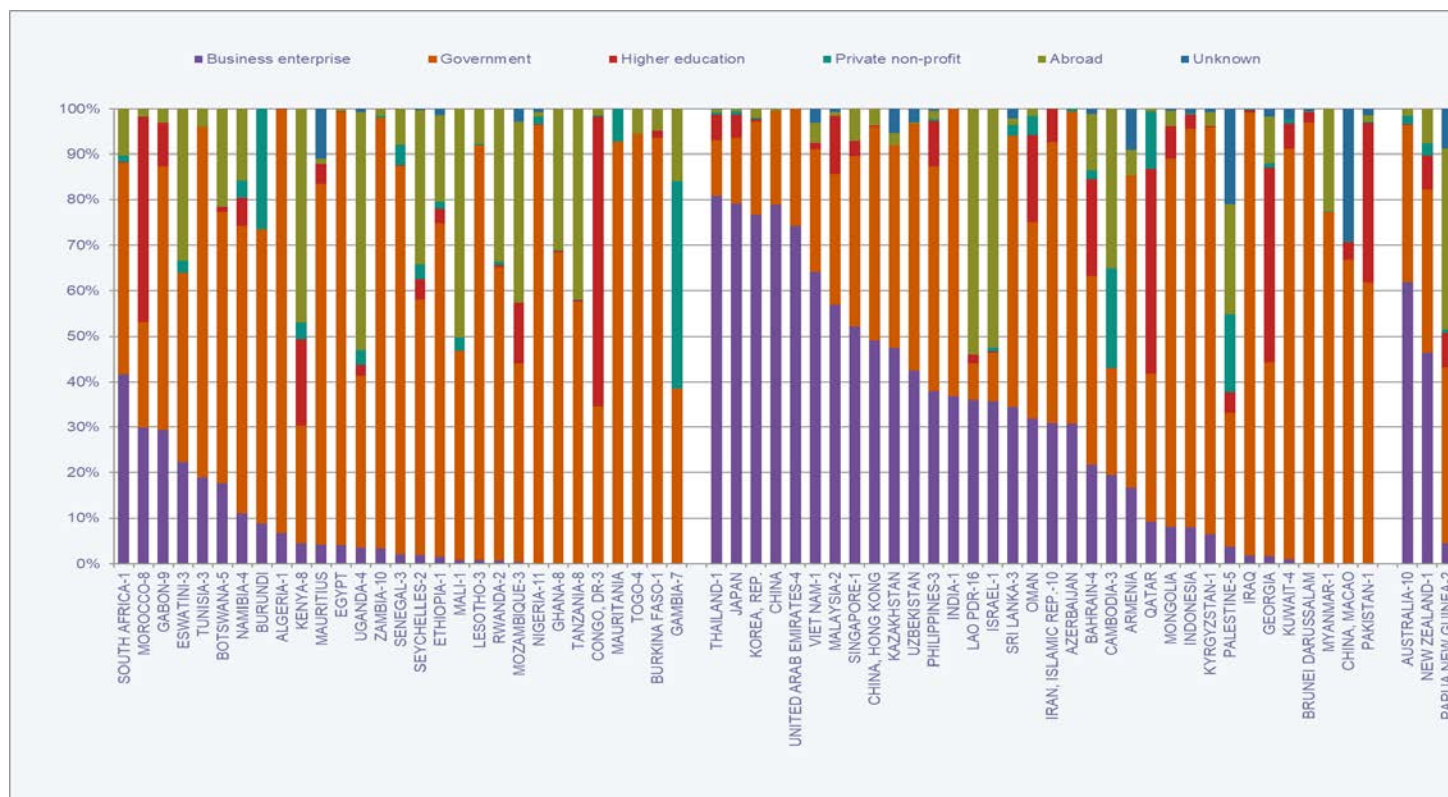
Notes: +1 = 2019, -1 = 2017, -2 = 2016, -10 = 2008.

Source: UNESCO Institute for Statistics, June 2020.



Figure 7. Funding in Africa, Asia and the Pacific

GERD by source of funds, 2018 or latest year available



Notes: -1 = 2017, -2 = 2016, -3 = 2015, -4 = 2014, -7 = 2011, -8 = 2010, -9 = 2009, -10 = 2008, -11 = 2007, -13 = 2005, -16 = 2002.

Source: UNESCO Institute for Statistics, June 2020.

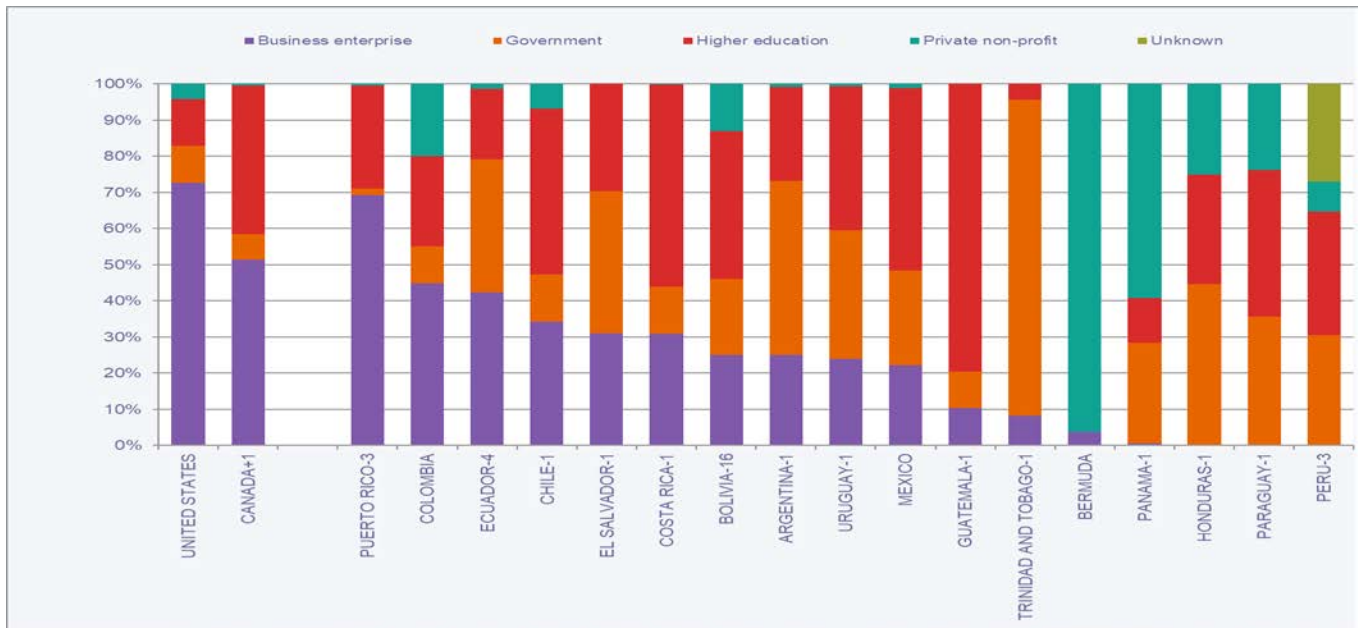
Which sectors receive the most investment?

Figures 8, 9 and 10 depict R&D expenditure by sector of performance. This refers to total gross intramural expenditure on R&D during a given period by institutions corresponding to each sector (business enterprise, government, higher education and private non-profit organizations), independent of the source of funds and expressed as a percentage.



Figure 8. A breakdown of R&D investment in the Americas

GERD by sector of performance, 2018 or latest year available



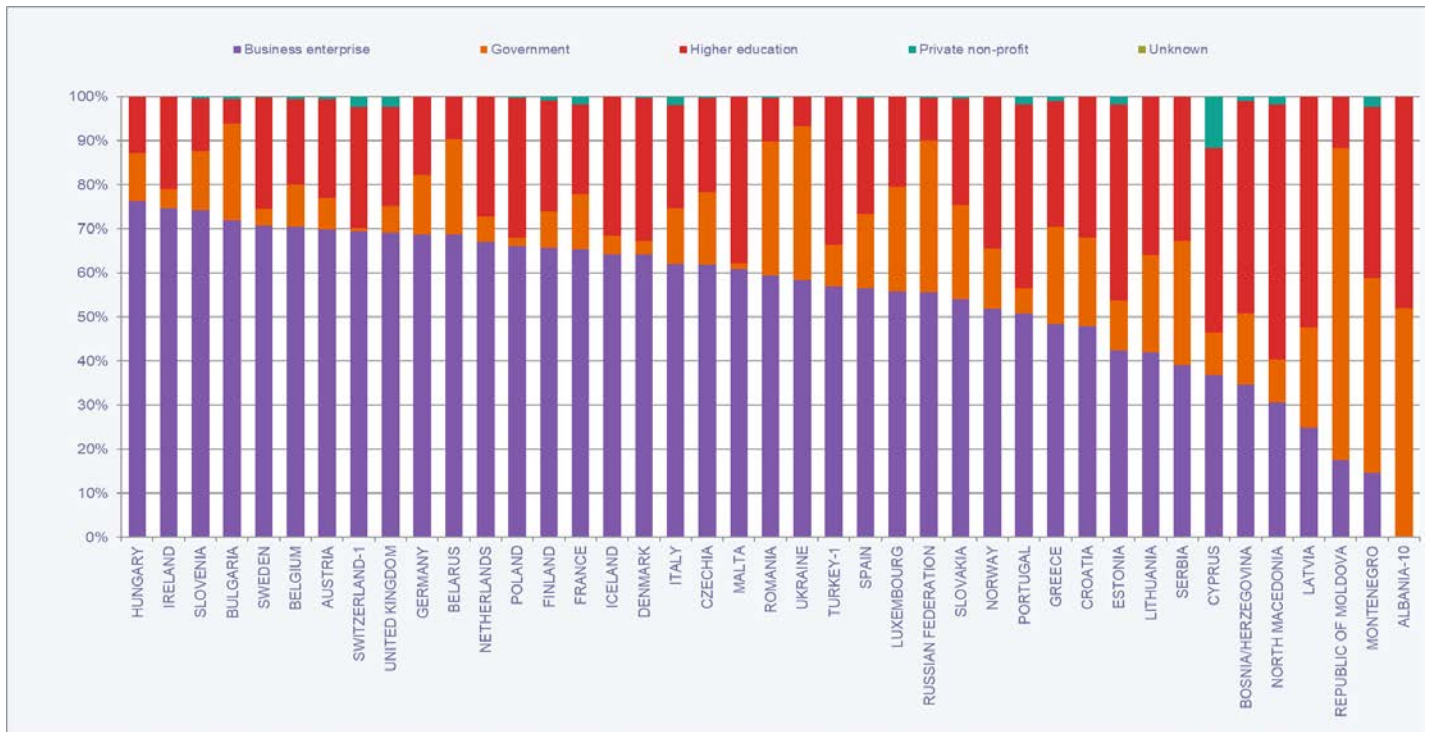
Notes: +1 = 2019, -1 = 2017, -3 = 2015, -4 = 2014, -16 = 2002.

Source: UNESCO Institute for Statistics, June 2020.



Figure 9. A breakdown of R&D investment in Europe

GERD by sector of performance, 2018 or latest year available



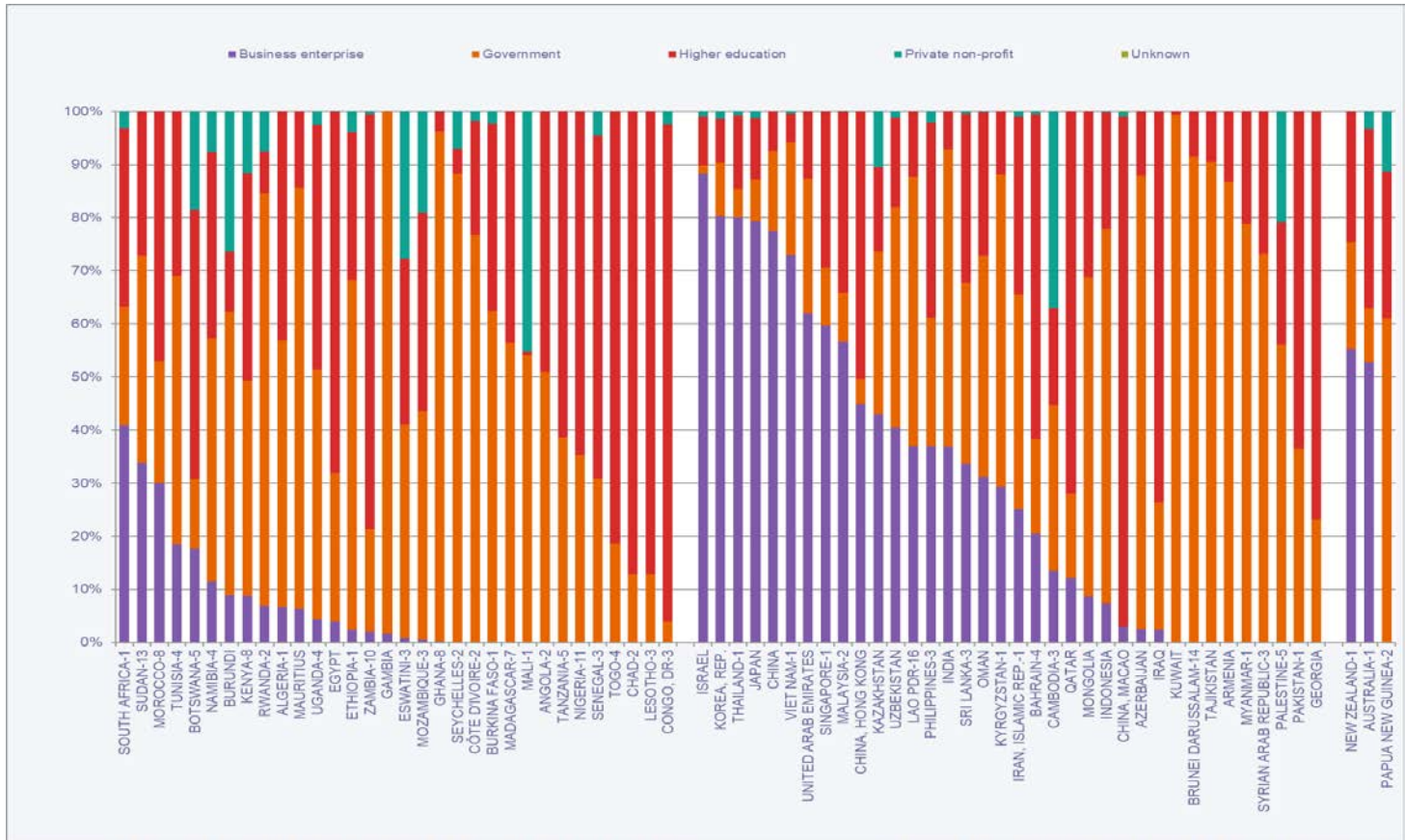
Notes: -1 = 2017, -10 = 2008.

Source: UNESCO Institute for Statistics, June 2020.



Figure 10. A breakdown of R&D investment in Africa, Asia and the Pacific

GERD by sector of performance, 2018 or latest year available



Notes: -1 = 2017, -2 = 2016, -3 = 2015, -4 = 2014, -5 = 2013, -7 = 2011, -8 = 2010, -10 = 2008, -11 = 2007, -13 = 2005, -14 = 2004, -16 = 2002.

Source: UNESCO Institute for Statistics, June 2020.

Please consult the UIS website <http://uis.unesco.org> to access the UIS database and subscribe to eAlerts on the Institute's latest publications, data visualisations and data releases.

For more information on R&D data, please consult the [UNESCO eAtlas of Research and Experimental Development](http://on.unesco.org/RD-map) at <http://on.unesco.org/RD-map>

The regional totals/averages presented in this fact sheet are based on UIS regions. Please consult the UIS Data Centre ([UIS.Stat](http://uis.unesco.org)) for other groupings.