



EUROPEAN COMMISSION

Brussels, 8.6.2011
SEC(2011) 739 final

22/41

COMMISSION STAFF WORKING PAPER

Innovation Union Competitiveness report 2011

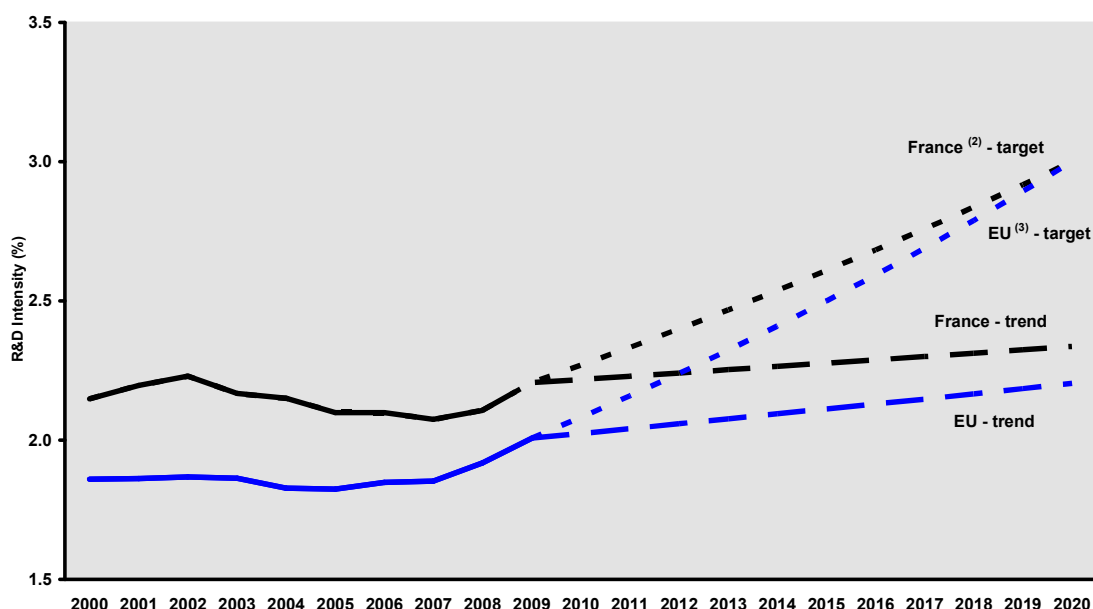


Progress towards meeting the 2020 R&D target

In the last decade, R&D intensity in France remained in the range of 2.07-2.21% of GDP, about 16% above the EU-27 average. If France's and the EU-27's current trends continue, France's R&D intensity will hardly be above EU-27 average in 2020. In order to maintain and increase its economic competitiveness and secure high-quality jobs, France will have to increase its investments in research and innovation.

French authorities have recognised this and have set an ambitious, albeit realistic national R&D target for 2020: R&D intensity in France should account for 3% of the national GDP in 2020.

France - R&D Intensity projections, 2000-2020 ⁽¹⁾



Source: DG Research and Innovation

Innovation Union Competitiveness Report 2011

Data: DG Research and Innovation, Eurostat

Notes: (1) The R&D Intensity projections based on trends are derived from the average annual growth in R&D Intensity for 2000-2009 in the case of the EU and for 2004-2009 in the case of France.

(2) FR: This projection is based on a tentative R&D Intensity target of 3.0% for 2020.

(3) EU: This projection is based on the R&D Intensity target of 3.0% for 2020.

(4) FR: There is a break in series between 2004 and the previous years.

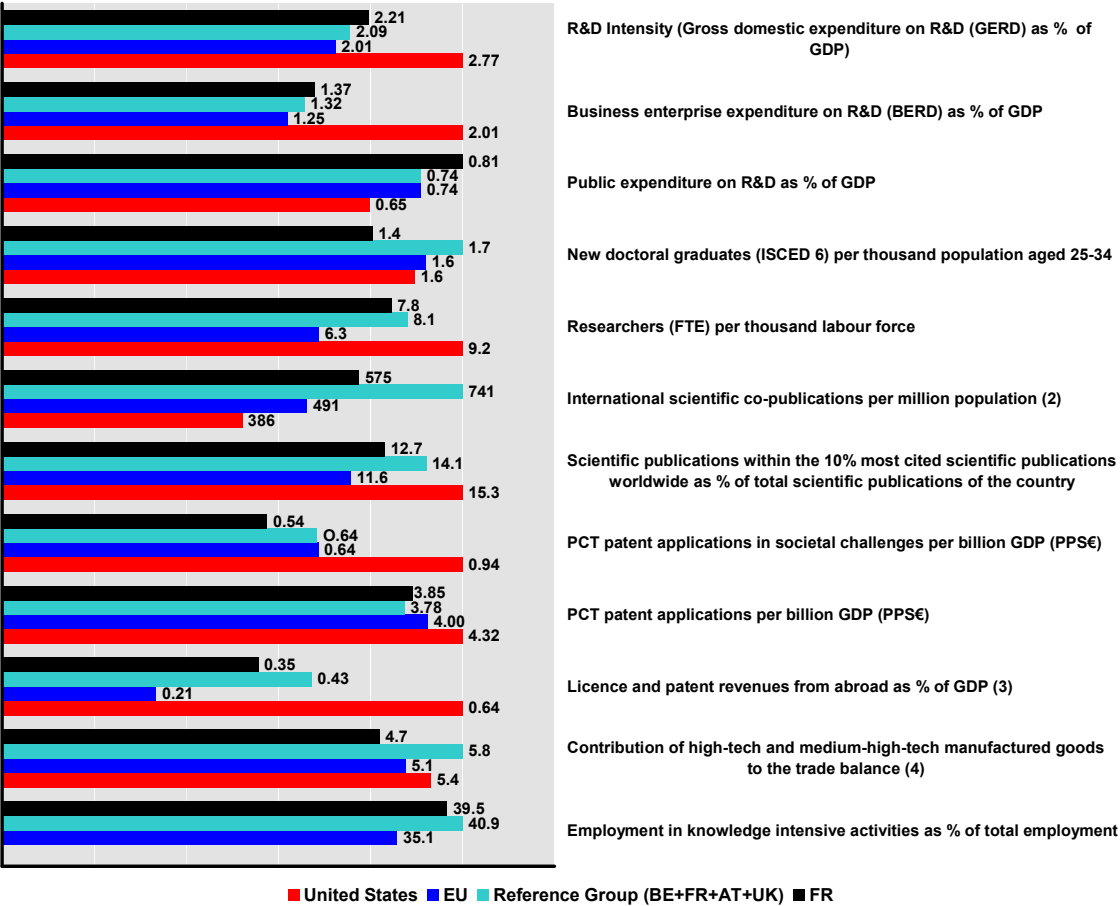
Research and innovation performance

The R&D intensity gap in France lies primarily in the business sector. The insufficient level of business expenditure on R&D in France is to a large extent a reflection of the economic structure of the country moderately oriented towards high-tech manufacturing sectors. High-tech and medium-high-tech manufactured goods contribute less than the EU average to the trade balance. France also scores moderately in terms of patent inventions, in particular patents in technologies related to health and climate change mitigation. In addition, the

country benefits only moderately from licence and patent revenues from abroad compared to the US, and also to countries of comparable research intensity in the EU. This demonstrates that part of the research is not related to the fast growing domains at world scale, or that the ability to protect and market technologies is still limited, calling for the development of a more intense knowledge-intensity in France. Finally, France produces fewer doctoral graduates relative to its population aged 25-34 than the average in EU-27 and 20% fewer than in comparable EU countries. This may be related to the dual higher education system in France, which undermines the attractiveness of the doctorate diploma. Surprisingly this low rate of doctoral graduates every year does not affect the number of researchers in the labour force, suggesting that a higher proportion of doctoral graduates in France engage in research careers than in other countries where doctoral graduates might engage more often in other professional activities.

France

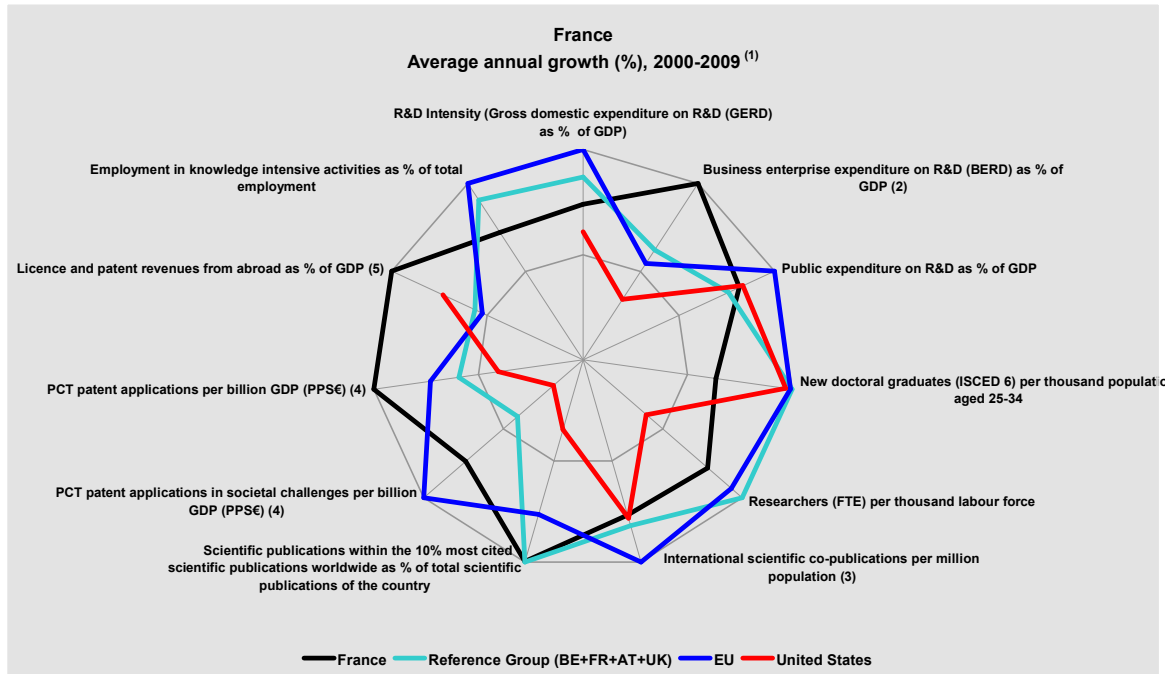
R&D profile, 2009⁽¹⁾



Source: DG Research and Innovation
 Data: Eurostat, OECD, Science Metrix / Scopus (Elsevier)
 Innovation Union Competitiveness Report 2011

Notes: (1) The values refer to 2009 or to the latest available year.
 (2) The EU value refers to the median rather than to the average.
 (3) EU refers to extra-EU.
 (4) (i) EU does not include BG, CY, LV, LT, MT, RO; (ii) EU refers to extra-EU.
 (5) Elements of estimation were involved in the compilation of the data.

In dynamic terms, in general France has made good progress in outputs: high-impact publications, but also patent inventions and licence and patent revenues from abroad which have been weaknesses of the French system. Progress on the input side — public and business expenditure, new doctoral graduates and researchers — has been more moderate and less rapid than the EU average. A more rapid progress in outputs than in inputs points to an increased efficiency of the overall system.



Source: DG Research and Innovation

Innovation Union Competitiveness Report 2011

Data: Eurostat, OECD, Science Metrix / Scopus (Elsevier)

Notes: (1) Growth rates which do not refer to 2000-2009 refer to growth between the earliest available year and the latest available year over the period 2000-2010.

(2) Average annual growth for France refers to 2006-2010 - there is a break in series between 2006 and the previous years.

(3) The EU value refers to the median rather than to the average.

(4) Average annual growth refers to real growth.

(5) EU refers to extra-EU.

(6) Elements of estimation were involved in the compilation of the data.

Participation in the European Research Area: scientific and technological collaborations

France has a good level of international scientific co-publications (R&D profile above). Its main EU partners in science are Germany, the United Kingdom, Italy, Spain and Switzerland, followed by the Netherlands, Belgium and Poland. This reflects to a large extent the size of the research systems of these countries, but also geographical and cultural ties. This cooperation appears balanced and highly diversified, which constitutes an asset for the country.

There are always much fewer co-inventions of patents than co-publications in science. But France has strong ties with foreign co-inventors based in the most active European countries in patent inventions, namely Germany, Switzerland and the Netherlands, followed by the United Kingdom and Belgium. The connections with other European countries are relatively limited or non-existent. The lack of co-inventions with southern partners such as Spain and Italy contrasts with the number of co-publications with these countries, highlighting possible room for improvement.

Co-publications between France and European countries in 2000-2009

Co-invented EPO patent applications between France and European countries in 2000-2009

