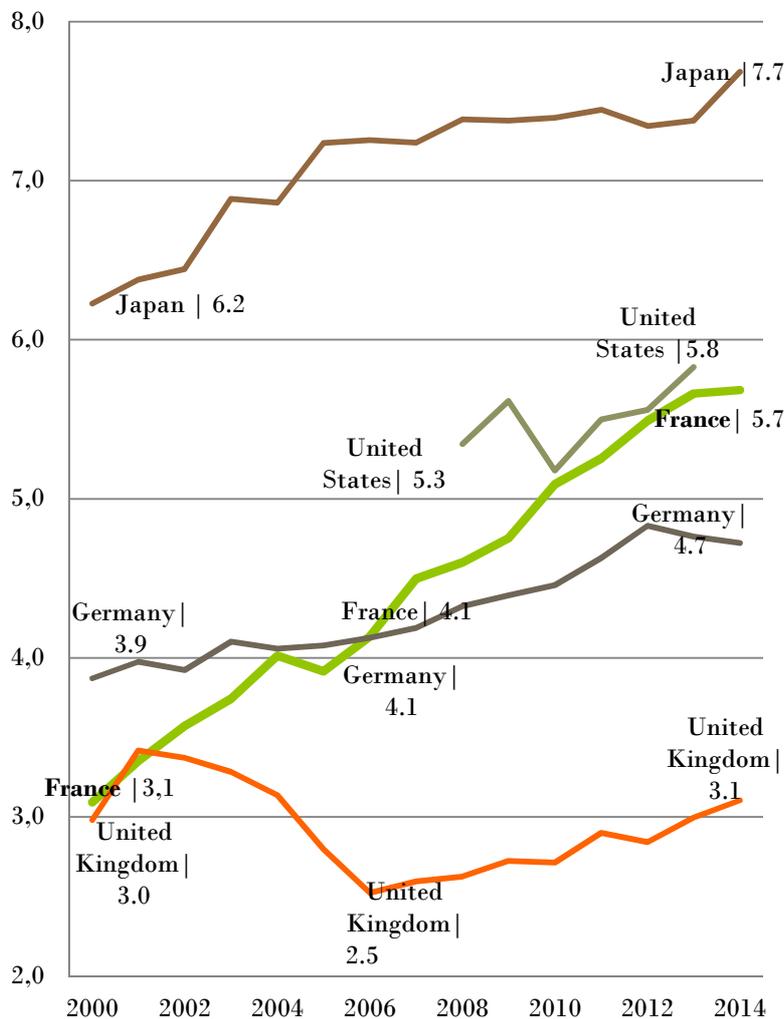


## France now one of the leading industrial research hubs thanks to its Research Tax Credit

From 2008 to 2013, the number of corporate research jobs in the working population increased in France more than in any other country. Not only does Research Tax Credit support corporate research in France, it clearly boosts research employment in the country.

Image 1 – Progress of corporate research employment



	2008	2013	Growth (%)
Japan	7.38	7.38	-0.1
USA	5.34	5.83	9.1
France	4.60	5.66	23.1
Germany	4.32	4.76	10.1
UK	2.63	3.00	14.2

Corporate researchers per thousand employees (2000-2014)

Source: OECD 2016, Main Science and Technology Indicators, [https://stats.oecd.org/Index.aspx?DataSetCode=MSTI\\_PUB](https://stats.oecd.org/Index.aspx?DataSetCode=MSTI_PUB), Extracts. Processing and presentation ANRT.

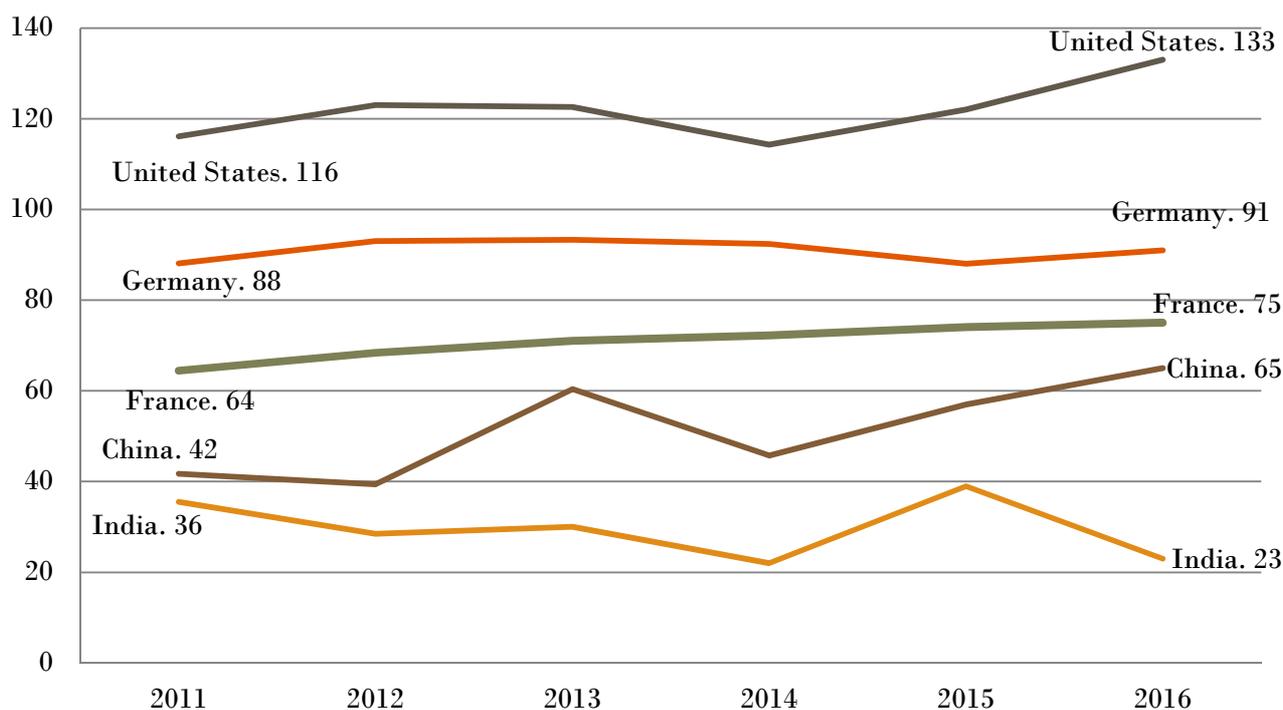
In France, the growth rate of employment in corporate research is higher than in any other major research country, thanks to Research Tax Credit (RTC). The other countries have also set up measures to encourage hiring in the domain. Over the last eight years, Research Tax Credit regulation has been subject to only slight modifications. The positive impact on scientific jobs in companies located in France is indisputable (cf. Image 1). Thanks to the Research Tax Credit “young doctor” initiative, companies hire 1,300 doctorate holders every year (cf. PR ANRT, 16 May 2016). Research Tax Credit is achieving its objectives, i.e. it encourages companies to de-risk their technological developments in France.

France has equipped itself with a powerful tax tool to boost research in the country. With companies employing 5.7 researchers for 1,000 staff, numerous firms have seen an increase in their capacities to apprehend the state of the art, identify competence holders, and develop knowledge. As a result, industry’s international competitiveness emerges stronger.

### Virtuous circle of industrial research underway in France

The United States, still the most expensive country, and India, still the cheapest, once again top and tail company researcher rates in the world (cf. Image 2). The policies applied by these two countries are different from elsewhere. Costing 50% more than all other developed countries, the United States seems obliged to pay high salaries to attract talented people. How long will it succeed in maintaining this balance? China is in a similar situation, as it continues to close the gap by paying huge wages. Attracting and retaining researchers at the level required by its innovation-based growth strategy comes at a cost. China is moving towards French tariffs, which are average among OECD countries. The French ‘75’ (cf. Images 2 and 3) is a measure of the relative increased efficiency of the French innovation policy through Research Tax Credit. It is the direct result of a long-term strategy fostering immaterial investment.

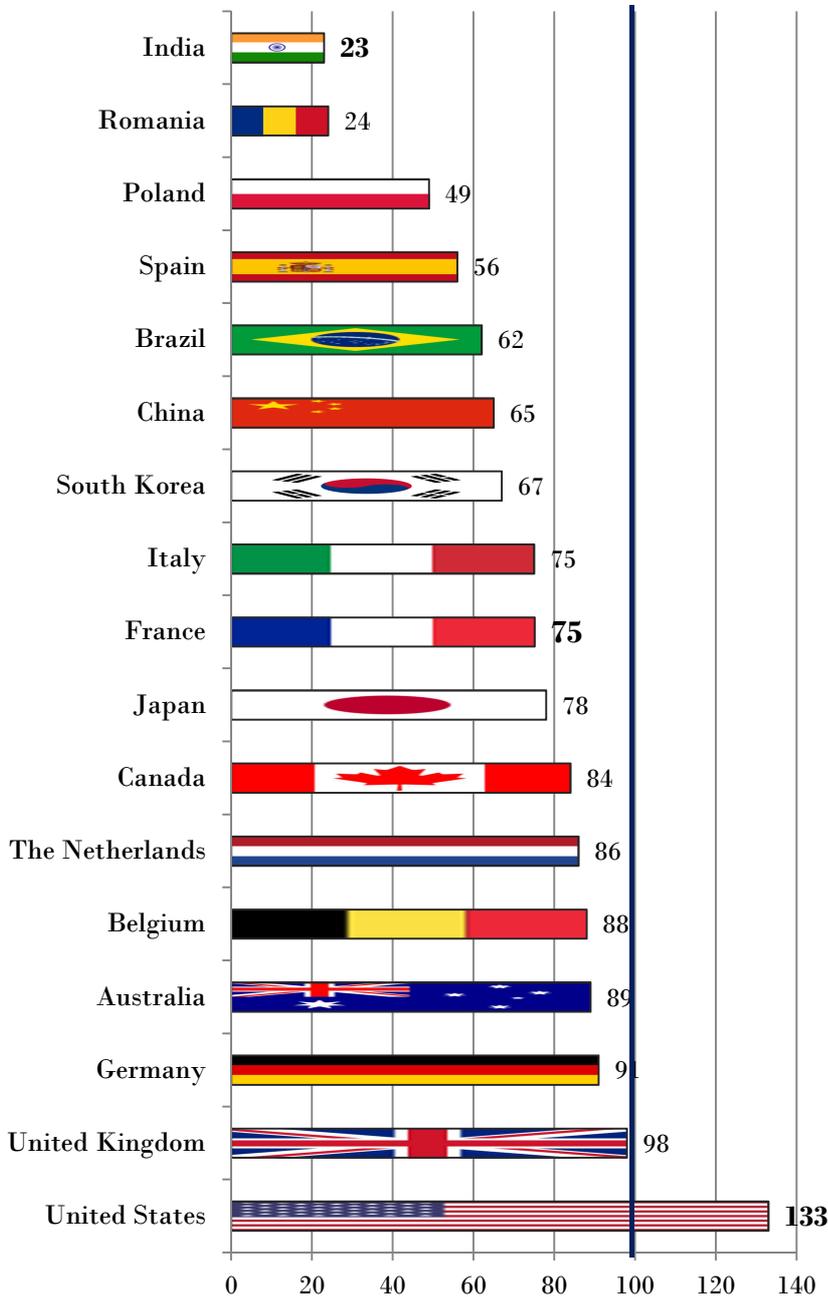
Image 2 – French researcher costs, competitive ranking, thanks to RTC



The cost of researchers takes the form of an index; The 100 mark stands for the cost of a French researcher with no tax credits. The rates show the average value per country, taking into account RTC and local subsidies.

Image 3 – Researcher rates 2016

Average researcher cost after incentives



| 100 = Cost France with no RTC or subsidies |

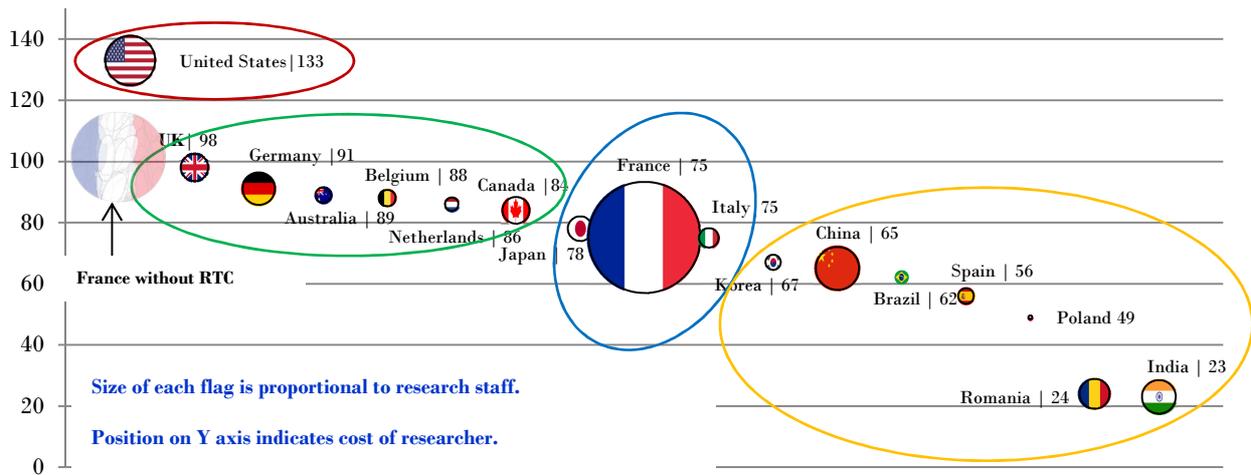
French research rates continue to rise at a slow pace, due to the drop in corporate R&D subsidies and minor changes in the rules for calculating RTC.

In the United States, rates are rising fast, and in the United Kingdom too. Recent changes for large companies (single 11% tax credit rate) are unlikely to improve the situation.

In Spain, rates remain attractive, although a lot higher than those in India and Romania. China continues to close the gap.

For the United States, Netherlands, China and Spain, inter-regional differences are rising sharply. The national average does not give a good indication of the reality of local support conditions.

Image 4 - Researcher rates and location of staff in 2016



Notwithstanding the size of the French flag – which shows that on average 49% of the ANRT 2016 panel’s research staff are located in France – without RTC, the country would be considerably less attractive. In fact, with the exception of the United States, France would be the most expensive country in the world. In the United Kingdom, the latest measure has not proved effective in yielding results. The country seems to be moving away from its traditional sphere and coming dangerously close to the American catchment area.

International competition in terms of research points to similar country profiles. Four types clearly stand out (cf. ellipses on image 4), in terms of rate levels. They each respond to different development strategies through research and innovation. The United States is a net importer of talent, but at a cost that only matches the attraction of the high-tech market. France, Japan and Italy aim at technological sovereignty and endogenous development, but that remains expensive. Traditionally advanced countries in Europe and the Commonwealth are handling a situation that is currently proving fairly profitable.

Indian and Romanian rates are similar: the cost in Romania comes to 24% of the French rate with no RTC or subsidy; India’s comes to 23%. The Panel members point out that the index reflects very different local situations in terms of research. Researchers of a higher level carry out quality R&D in low-cost conditions in Romania. In India, R&D involves mass specific services, often adapting products to local conditions.

### Attractiveness: “beware fragile”

The attractiveness of national territory is fragile. When major researcher employers on the ANRT panel were questioned, they confirmed that guaranteeing the progress of research employees in a country requires maintaining competitiveness through research costs. We observe a drop in the share of employees in some countries where researcher rates have increased (e.g. United Kingdom).

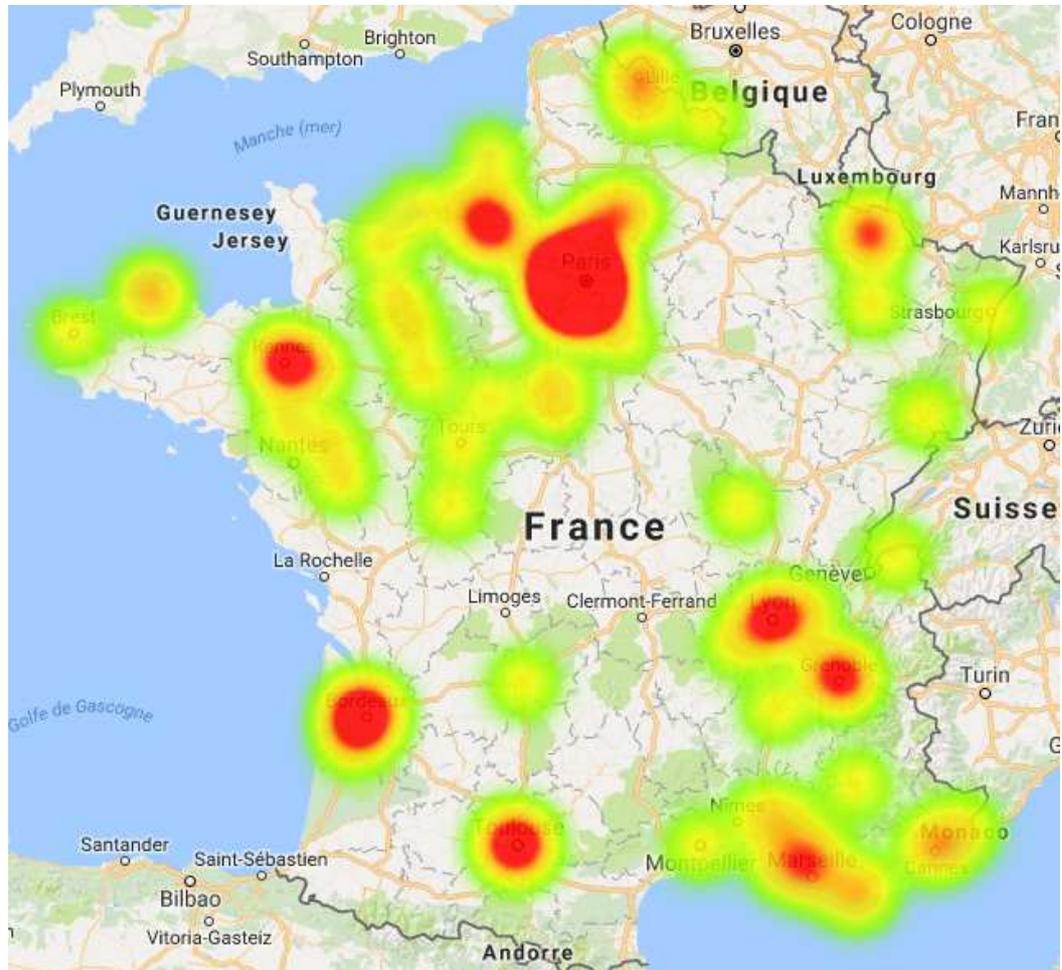
Retaining effective R&D in specialized technical areas involves maintaining a significant volume of research. In groups, research teams located in France compete internally with other teams located elsewhere. Researcher rates are a decisive factor for central decision-makers when it comes to maintaining research activity in a given geographic area (i.e. Europe, Asia, North America, South America).

Image 5 - Research in operation: the impact of RTC in France

The 16 companies on the ANRT 2016 panel maintain 116 R&D sites in the country.

Depending on the density of their presence, these 116 sites have a more intense (red) or less intense (green) impact on research and innovation ecosystems.

In France, 59% of ANRT 2016 panel researchers are located in the Paris region on 40 R&D sites.



**Sixteen international groups**, members of ANRT (National Association for Research and Technology) that carry out part of their research in France, this year accepted once again to calculate and communicate to ANRT the comparative cost price of their researchers (including direct aid and tax credit) in the countries where they invest in research.

These groups invest 15 billion euro in research in the world; this year more than **81,000 researchers were included** in this comparison, with a wide variety of areas of application.

They have R&D teams in over 30 countries and yet almost half of their employees are based in France! Although half of their research is carried out in this country, the reason is not just habit or patriotism. The simple explanation comes down to one word: competitiveness (cost and non-cost).



## Reliable, comprehensive barometer

International groups have every reason to view France as a favourable host country for their research investments. The quality of research and the proximity of large markets, along with favourable researcher prices and research costs for domestic propositions of comparable quality, carry the decision in favour of one or other of the research sites and in particular the company's development.

### **Researchers**

This study only concerns company researchers. These are employees whose task is research & development and who have contributed to at least one research project during the considered period.

### **Methodological approach with an emphasis on domestic consistency**

Taking as a reference the average price of a researcher in France before any subsidy and research tax credit (base 100), ANRT aggregated the compatible data specific to each group to produce the researcher rate by country.

For a given country, the average cost of a researcher is only included if two conditions are fulfilled:

- The ANRT panel has at least two averages of charge-inclusive costs from two different companies
- The research centres considered employ more than 20 people

The different accounting entries were pooled in order to standardize the information, while considering differences between the groups' accounting systems. The information is thus homogeneous at group level, making international gaps highly representative.

### **Virtuous tax measures**

An adequate tax incentive policy involves creating conditions in a country whereby the public resources mobilized produce the desired effect, no more and no less. In the absence of sound information from the field, the legislator cannot know the impact of policies in place elsewhere in the world and attempts to strike the right balance. Studies carried out on research tax credit, in particular by the OECD, quantify theoretical impacts at a macro-economic level. Despite their intrinsic qualities, these studies do not have the capacity to describe the actual cumulated effect on company accounts of all public policies, direct aid and tax incentives.

Accounting is the only real barometer of major companies, taking all advantages and charges into account. Multinational groups' accounting and tax systems are obliged to be robust and consistent; financial control and business intelligence can be used to extrapolate decision-making data. Information is therefore highly sensitive: it reflects the strategy of both companies and governments through subsidy regimes specific to sectors, locations, or intellectual property registration in a country.

### **No upper limit means no windfall effect**

An upper limit defines the optimum expected by public authorities. A cap indicates the maximum research investment that the country expects. As a result, it is more favourable to those that make a small share of their research investment in France; it is less favourable to those that make French sites their main global research hubs.