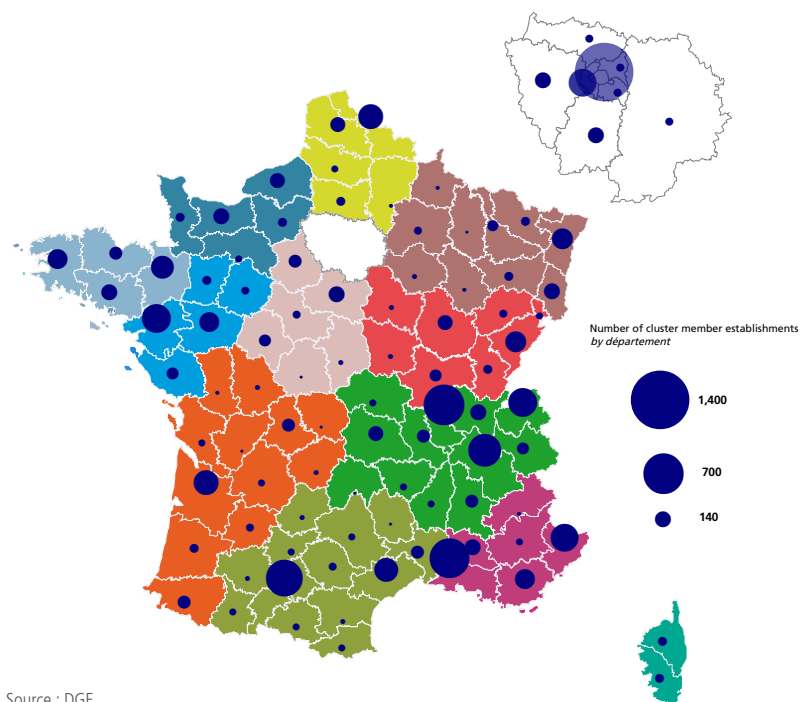


Competitiveness clusters (*pôles de compétitivité*), which bring together innovation stakeholders across France, include a large proportion of young companies

Competitiveness clusters (*pôles de compétitivité*) aim at promoting collaborative R&D projects by bringing together companies, public research labs and academia with a view to marketing innovative new products, processes and services. In 2014, France's 71 clusters counted some 8,500 member companies, plus nearly 1,150 public research and training institutions. Most cluster member firms are SMEs, of which many are young. While the manufacturing industries sector accounts for the majority of SMEs and mid-tier firm staff in the various clusters, the share of the digital and scientific sector is increasing. Moreover, while member companies are predominantly located in areas with a high level of R&D activity, they are relatively less well represented in Ile-de-France compared to all companies conducting research in France. Lastly, funding from the Single Interministerial Fund (*fonds unique interministériel – FUI*) is increasingly allocated to SMEs and mid-tier firms.

Map: Geographic distribution of cluster member establishments (2014)



In 2014, France's 71 clusters (*Box 1*) had about 8,500 member companies, with an additional 1,150 public research labs and academic institutions (*Box 2*).

These member firms employed 1.7 million employees, representing 7% of the total workforce in France's commercial sector.

A total of 10,380 individual establishments (including multiple units of production within one company) belonged to the clusters in 2014, 75% of which were owned by SMEs, 17% by mid-tier firms and 8% by large firms. More than one-third of the workforce (36%) of these individual establishments were executives and senior executives, including researchers and engineers dedicated to R&D. This share is lower for individual

establishments at the national level (21% of employees in the industrial manufacturing and business services sectors).

Cluster members are largely SMEs, many of which are young companies

A large portion of cluster member firms are SMEs (87%), half of which (53%) are micro-enterprises (employing fewer than ten people). Mid-tier firms and large firms account for 11.5% and 1.5%, respectively. These shares have remained relatively stable over time (86% SMEs, 12% mid-tier firms and 2% large firms in 2013).

A significant portion of these SMEs are young: in 2014, half

of all SMEs in clusters were less than 10 years old. Moreover, a significant share (14%) of them benefits from the “Young Innovative Enterprises” scheme (Jeune Entreprise Innovante – JEI).¹ In turn, one-third of all JEIs are cluster members. The breakdown by age of SME cluster members is similar to that of all SMEs carrying out R&D activities at national level.² Compared to cluster members, SMEs that are less than 10 years old account for a much lower share at the national level (one-third for SMEs in the industrial manufacturing and business services sectors). Conversely, cluster mid-tier firms are typically older than all mid-tier firms nationwide: 15% of mid-tier firms in clusters were less than 10 years old in 2014, with the corresponding proportion being 23% for mid-tier firms performing R&D at the national level and one-third for all mid-tier firms in the industrial and business services sectors.

Most jobs generated by SMEs and mid-tier firms in clusters are in the manufacturing industries, but the share of digital and scientific sectors is increasing

In 2014, SMEs in clusters employed 216,000 people, while the workforce in mid-tier firms consisted of 594,000 people. The manufacturing sector concentrated the majority of cluster member employees: More than half of the employees of cluster member SMEs are found in the manufacturing industry, while for mid-tier cluster member firms even two-thirds of employees worked in the industrial sector (*Figure 1*). However, these numbers are lower than they were in 2013 (-5% and -3%, respectively). This decrease reflects the rising share of companies in both categories involved in scientific and technical activities. After the industrial sector, the largest share of cluster SME employees are involved in scientific and technical activities, followed by ICT activities (23% and 14% respectively). The increase in the number of cluster members benefiting from the JEI scheme (+12% compared with 2013) is in line with the increase in cluster member SMEs in both of these sectors (+9% compared with 2013): a very high proportion of JEI are active in these sectors.³

Cluster SMEs employ as many executive and senior executive staff as mid-tier firms (30% vs 31%). There are relatively more executives in the fields of scientific and technical activities and in ICT, which by their nature are intensive in terms of this professional category. Executive positions in cluster SMEs are therefore fairly evenly distributed between these two sectors and the industrial sector (approximately 30% of executives and senior executives in each sector). However, the industrial sector still dominates in cluster mid-tier firms (56%).

A quarter of cluster mid-tier firms are foreign-owned

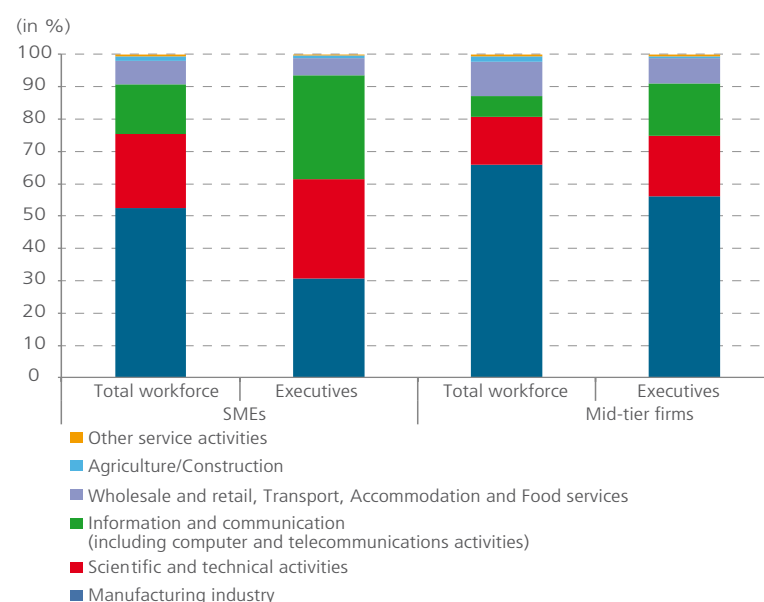
In 2014, foreign companies owned 8% of the SMEs and mid-tier firms in clusters, and employed 30% of their staff. These firms are on average larger than the French-owned SMEs and mid-tier firms in clusters.

¹ The Young Innovative Enterprises scheme, which was introduced in 2004, provides support for research and innovation efforts of young SMEs (not more than 8 years old) by granting them tax benefits and, above all, an exemption from social security contributions on highly skilled jobs.

² SMEs excluding self-employed entrepreneurs performing R&D activities (2013 GECIR and Insee data).

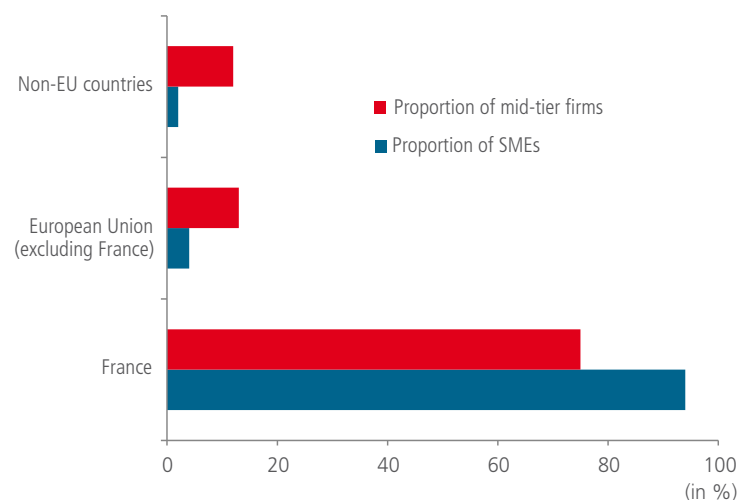
³ To learn more, see “Les 4 Pages de la DGE” no. 66, December 2016.

Figure 1: Number of employees in clusters by company category (SMEs and mid-tier firms) and sector of activity, 2014



Note: The numbers of employees and executives/senior executives are as of 31 December 2013.
Scope: Individual establishments in clusters in 2014 (including multiple units of production within one company).
Sources: DGE (2015 cluster governance survey), Insee.

Figure 2: Cluster SMEs and mid-tier firms by company ownership in 2014



How to read this chart: 94% of SMEs belonging to the clusters are owned by companies based in France.
Note: Number of employees as of 31 December 2013. Individual establishments are broken down according to the nationality of the group to which they belong.
Sources: DGE (2015 cluster governance survey), Insee.

While cluster SMEs are mainly French-owned (*Figure 2*), the share of foreign-owned establishments is higher among mid-tier firms: a quarter of them belong to foreign groups, equally divided between those based in an EU country and those based elsewhere. Although small, the percentage of foreign-owned SMEs (6%) grew slightly in 2014 compared to 2013 (+2% in number of firms, +4% points in workforce). By contrast, the share of foreign-owned mid-tier firms fell sharply (-8%, from one-third to one-quarter), with no change in the overall workforce.

Cluster companies are mainly located in regions with the highest R&D activity

All categories of companies combined (including large firms), the Ile-de-France region has the largest number of companies that are cluster members, with nearly 23% of the total. It is home to almost 27% of SMEs and 19% of mid-tier firms in clusters. It is followed by Auvergne-Rhône-Alpes (17% of SMEs and mid-tier firms), Provence-Alpes-Côte d'Azur (12% and 7%, respectively) and Occitanie (10% and 11%). Ile-de-France is the most highly-represented region with regard to SMEs and mid-tier firms in clusters (*Map and Table 1*).

The predominance of these four regions concerning competitiveness clusters is matched by their share of domestic R&D spending: Ile-de-France, Auvergne-Rhône-Alpes, Provence-Alpes-Côte d'Azur and Occitanie alone accounted for nearly three-quarters of domestic R&D expenditure in 2014.⁴ However, cluster companies are relatively little concentrated in the Ile-de-France region compared to all companies active in R&D: 37% of companies (excluding self-employed entrepreneurs) performing R&D are located in Ile-de-France (35% for SMEs, 36% for mid-tier firms).⁵ This can be ascribed to the regional nature of the cluster policy, which favours a spread of projects across all regions, and by the fact that it is likely more important for a non-Parisian company to join a cluster in order to develop R&D partnerships.

Funding from the FUI is increasingly allocated to SMEs and mid-tier firms

Between 2005 and 2015, nearly 3,400 collaborative projects were certified by the clusters, with 47% receiving financial support

⁴ "Domestic R&D expenditure up 2.3% in 2014", MENESR Flash Note 3, March 2016.

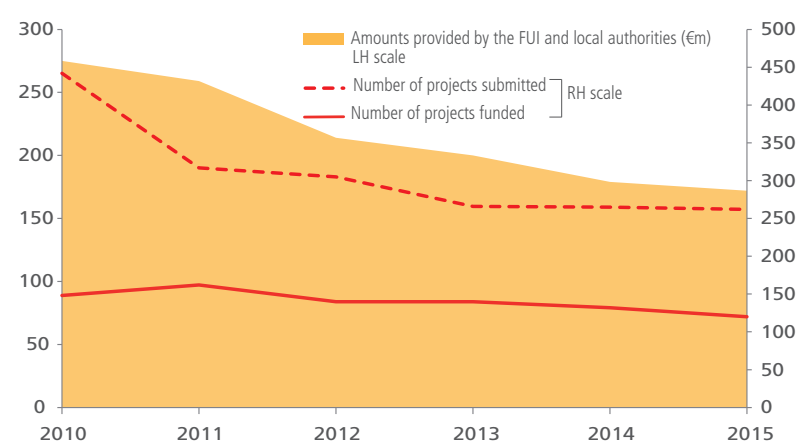
⁵ Based on 2013 GECIR data, DGE calculations.

Table 1: Employees of cluster SMEs and mid-tier firms by region in 2014

| Region | SMEs | | Mid-tier firms | |
|----------------------------|----------------------------------|--------------------------|----------------------------------|--------------------------|
| | Proportion of establishments (%) | Employees (in thousands) | Proportion of establishments (%) | Employees (in thousands) |
| Île-de-France | 26.7 | 51.0 | 19.3 | 98.6 |
| Auvergne-Rhône-Alpes | 17.3 | 36.9 | 18.7 | 116.1 |
| Provence-Alpes-Côte d'Azur | 11.7 | 19.3 | 6.3 | 34.8 |
| Occitanie | 9.4 | 20.3 | 8.2 | 57.7 |
| Nouvelle-Aquitaine | 5.6 | 13.5 | 6.8 | 38.1 |
| Pays de la Loire | 5.2 | 12.1 | 7.0 | 34.4 |
| Grand Est | 4.7 | 13.3 | 6.8 | 71.0 |
| Bretagne | 4.5 | 10.6 | 7.1 | 43.4 |
| Bourgogne-Franche-Comté | 4.5 | 13.8 | 6.2 | 21.4 |
| Hauts-de-France | 3.4 | 11.7 | 6.5 | 37.0 |
| Normandie | 2.8 | 5.2 | 2.6 | 15.9 |
| Centre-Val de Loire | 2.8 | 6.3 | 3.8 | 23.1 |
| Outre-mer | 0.9 | 1.0 | 0.7 | 1.8 |
| Corse | 0.7 | 0.6 | 0.1 | 0.9 |
| Total | 100 | 215.6 | 100 | 594.1 |

Note: The numbers of employees and executives/senior executives are as of 31 December 2013.
Sources: DGE (2015 cluster governance survey), Insee.

Figure 3: Number of projects submitted to and funded by the FUI and financing by central government and local authorities, 2010-2015



How to read this chart: 262 collaborative projects were submitted in 2015, 120 of which were financed for a total of €172 million.
Source: DGE.

Box 1 : Clusters

In a given region, clusters bring together companies of all sizes, research labs and academia to develop synergies and cooperation around a shared theme. Their aim is to foster cooperation in R&D driven by a vision of the potential economic benefits. Cooperation of this nature in the service of innovation is aimed at:

- increasing the innovative effort of businesses and reinforcing mostly industrial activities with high technological content;
- improving the attractiveness of France through increased international visibility.

To this end, the clusters have two main tasks:

- Increase the economic impact of R&D projects. They act as "plants for products of the future", transforming collaborative R&D efforts into innovative products, processes and services brought to market.
- Support the growth of SMEs and mid-tier firms by providing them with collective and individual assistance: access to funding, opening to international markets, anticipation of their requirements in terms of skills and individual development assistance (advice, tutoring, etc.).

Clusters cover most sectors of activity: emerging technological fields (nanotechnologies, biotechnologies, environmental technologies, and so on) and more mature areas (automotive, aerospace, etc.). A cluster comprises on average 150 members, with a wide variations from one cluster to another: clusters can range from 60 to more than 1,000 members, combining SMEs, mid-tier firms, major companies, research laboratories and academia. Their average budget is roughly €1.6 million. They are led by small teams (nine full-time equivalents on average) whose role is to give member companies a vision of the market and to monitor their projects.

Since clusters were created in 2005, the FUI has funded collaborative research and development (R&D) projects, following semi-annual calls for submissions among cluster-accredited projects. The purpose of the FUI is to support research applied to the development of products, processes or services that can be brought to the market in the short to medium term, usually five years. They are collaborative projects, i.e. they must involve at least two companies and a research or training body. Projects must be managed by a company.

Table 2 : Financing of FUI¹ projects by central government and local authorities from 2005 to 2015

| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Total |
|---|------------|--------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|--------------|
| Central government ² (in €m) | 42 | 189 | 239 | 256 | 219 | 157 | 148 | 118 | 116 | 93 | 88 | 1 665 |
| Local authorities ³ (in €m) | 0 | 98 | 126 | 152 | 128 | 118 | 108 | 95 | 83 | 86 | 83 | 1 077 |
| Project base | 112 | 1 012 | 852 | 925 | 819 | 645 | 621 | 592 | 527 | 414 | 400 | 6 919 |

¹ Collaborative projects selected under calls for submissions open between 2005 and 2015 and financed by the FUI.

² Commitment authorisations for the FUI.

³ Project funding intentions of local and regional authorities.

from the government through the Single Interministerial Fund (*fonds unique interministériel* – FUI) and from local authorities. Over this period, nearly 1,600 collaborative R&D projects were funded, representing a total estimated amount of eligible expenditure of €6.9 billion at the time of the request for FUI funding. The FUI and local authorities contributed an average of 40% of the funding for these projects over the period (Table 2).

The number of projects submitted to the FUI and the funding granted decreased between 2010 and 2015 (Figure 3). During this same period, cluster SMEs and mid-tier firms accounted for an average of 40% of participants in FUI-funded projects (Table 3). The average percentage of FUI funds allocated to SMEs and mid-tier firms of the total amount allocated to all enterprises was 32%, with a sharp increase over the period (42% in 2015, compared to 25% in 2010).

Table 3: Share of FUI funding for SMEs and mid-tier firms from 2010 to 2015

| Year | Number of projects submitted | Number of projects funded | Average number of partners ¹ per project | Share of SMEs and mid-tier firms (%) | Average amount funded per project (in €m) | FUI share of SMEs and mid-tier firms (%) |
|------|------------------------------|---------------------------|---|--------------------------------------|---|--|
| 2010 | 442 | 148 | 7.45 | 36.6 | 1.86 | 25.2 |
| 2011 | 317 | 162 | 7.06 | 38.9 | 1.60 | 27.3 |
| 2012 | 305 | 140 | 6.95 | 37.8 | 1.53 | 31.8 |
| 2013 | 266 | 140 | 7.01 | 42.6 | 1.43 | 36.2 |
| 2014 | 265 | 132 | 6.36 | 42.1 | 1.36 | 31.1 |
| 2015 | 262 | 120 | 6.20 | 41.9 | 1.43 | 42.3 |

¹ Partners of FUI collaborative projects can be companies, research organisations or laboratories, as well as training organisations.
Source : DGE.

■ Marc DUFAU, DGE

■ Box 2: Methodology, scope and definitions

The analysis focuses on individual establishments that were members of clusters at the end of 2014, located in France – regardless of their nationality – and identified during the first half of 2015 as part of the annual cluster governance survey by the Directorate-General for Enterprise (DGE). These data were supplemented by matching them with several databases of public statistics. Since this information was available only for 2013 during the analysis, the number of employees is as of 31 December 2013.

The industrial sector covers the NAF classification codes from 01 to 39, the ICT sector covers the codes from 58 to 63, and scientific and technical support activities for enterprises includes the codes 71, 72 and 74. A “company” is the smallest combination of legal units constituting an organisational unit for the production of goods and services with a certain degree of decision-making autonomy, notably as regards the allocation of its recurring resources. The definitions used for SMEs, mid-tier firms and large firms are consistent with the definitions given in the 2008 Economic Modernisation Act:

- An SME is a company employing fewer than 250 employees, with revenue of less than €50 million or total assets of less than €43 million
- A mid-tier firm is one employing fewer than 5,000 employees, with revenue of less than €1.5 billion or total assets of less than €2 billion, and that is not an SME;
- Other companies are large firms.

The term “individual establishment” refers to a production unit identified by a physical address. It is the most appropriate level for a geographical approach to the economy. A company may therefore comprise one or more establishments.

To learn more:

- Bellégo Ch. « Les pôles de compétitivité et les projets financés par le FUI ont accru les dépenses de R & D, l’emploi et l’activité, sans effet d’aubaine », Le 4 Pages de la DGCI, no. 23, April 2013.
- Hovaguimian F. « Les PME membres des pôles de compétitivité nouent plus de partenariats internationaux pour innover que les autres PME », Le 4 pages de la DGCI, no. 29, Septembre 2013.
- Moutaabbid A. « Le dispositif JEI a bénéficié à 3 500 entreprises en 2015, essentiellement des secteurs du numérique et des activités scientifiques », Le 4 Pages de la DGE, no. 66, Décembre 2016.

For more information, please see the « Politique-Enjeux/ Compétitivité/Pôles de compétitivité » and « Études et statistiques » sections at www.entreprises.gouv.fr

Publication Manager: Pascal Faure

Editor-in-Chief: François Magnien

Cartograph: Abdel Khiati

Editorial Secretariat: Martine Automme, Nicole Merle-Lamoot

Layout: Hélène Allias-Denis, Brigitte Baroin

ISSN: 2269-3092

Copyright registration: 2017

DGE - 67, rue Barbès, 94200 Ivry-sur-Seine

