No. 4 December 2010

The State of Higher Education and Research in France

35 indicators

www.enseignementsup-recherche.gouv.fr

Published by
the Ministry of Higher Education and Research
Sub-Directorate for Information Systems and Statistical Studies.
1, rue Descartes
75231 Paris cedex 05

Executive Editor
Olivier Lefebvre

Chief Editor
Marie-Hélène Prieur

Authors
Magali Badonnel
Marc Bideault
Nicolas Bignon
Yacine Boughazi
Luc Brière
Frédéric Brouillet
Nathalie Caron
Jean-Pierre Dalous
Catherine David
Olivier Dorothée
Dominique Epiphane
Joelle Grille
Martine Jeljoul
Françoise Laville
Sylvie Lemaire
Bruno Lutinier
Isabelle Maetz
Claude Malègue
Valérie Mérindol
François Musitelli
Sylvain Papon
Thomas Pautrat
Sylvaine Péan
Delphine Perelmuter
Laurent Perrain
Pascale Pollet
Pascale Poulet
Danielle Prouteau
Suzy Ramanana-Rahary
Maryline Rosa
Pasquin Rossi
Chris Roth
Marguerite Rudolf
Frédérique Sachwald
Renaud Sauvage
Fanny Thomas
Loïc Thomas
Elise Verley
Claudette-Vincent Nisslé
Ronan Vourc'h
Sandra Zilloniz

Layout
Marie-Laure Jouanno

Printing
Imprimerie Moderne de l'Est

DEPP/DVE Sales
61, 65, rue Dutot
75735 Paris cedex 15

The State of Higher Education and Research in France

Preface

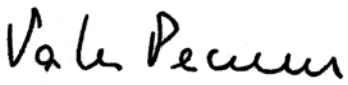
With this fourth edition, the State of Higher Education and Research addresses the information and management support tools that the Ministry of Higher Education and Research intends to make available to the public, stakeholders and policy makers. In fact, evaluation and transparency are key principles in all ministry activities and must be based on a quality information system. To this end, the ministry now has its own department dedicated to statistics and information systems, which was responsible for this document.

While the document includes new sections, on study trips abroad, employability and the research work of young innovative companies, the on-going nature of the analyses contained enables it to assess the changes taking place in our system of higher education and research, currently undergoing a major modernisation process so that France may assume its full place in the global knowledge economy.

The challenges facing higher education include the following: raising the general level of knowledge and skills of the population in order to raise to 50% the proportion of higher education graduates in a given age group by 2012; the promotion of equal opportunities; achieving a fit between training provision and European higher education standards; the strengthening of the link between training and the labour market; and the renewal of the relationship between the state and higher education institutions. Implementing a national strategy for research and innovation; improving coordination between our research agencies in a renewed partnership with universities; establishing a common programme at European level; and developing private research in closer cooperation with public research are also challenges that our research policies must address.

These challenges must be met by institutions that are more autonomous and more accountable, hence more efficient — a development which will stand to benefit the entire university community: faculty members, administrative and service staff, and of course students.

The indicators included in The State of Higher Education and Research can be used to monitor and better understand the implementation since 2007 of a policy prioritising higher education and research through a series of budgets, the recovery plan, Operation Campus and future investments, Research and higher education are in fact inseparable and indispensable levers for a competitive economy and for the development of the knowledge society.



Presentation

As in previous editions, this 4th edition of *The State of Higher Education and Research* presents a detailed overview, backed up by figures, of current developments within the French system, the resources it deploys and its outcomes, situating it, wherever data permit, in relation to its international counterparts. Each of the 35 themes comprises a double page with graphs, tables and notes, featuring the latest available overall data on each subject. These data are derived from the statistical departments of various ministries (MoR, MEN, MEFI...) but also other organizations such as CEREQ, CNOUS, INSEE, OST or the OECD (see appendix for acronyms).

Net increase in higher education expenditure

The nation spent €26.3bn on Higher Education in 2009, an increase of €1bn compared to 2008. This expenditure has multiplied by 2.5 since 1980 (at constant prices). In 2009, average expenditure per student amounted to €11,260 — 41% more than in 1980. It is now equivalent to the average expenditure for a student of general or technical secondary school (€11,400). This cost differs substantially according to the various courses of study: ranging from €10,220 on average per year for a public university student to €14,850 euros for a student in the CPGE (*Classe préparatoire aux grandes écoles*: preparatory class for the *Grandes Ecoles*). The difference is explained largely by the teacher-student ratio.

Three-quarters of this higher education expense goes on personnel costs. As of September 2009, the teaching and research force in public higher education under the supervision of Ministry for Higher Education and Research was 93,000, including 56,000 teaching researchers and faculty members of similar status: 60% of the total. Secondary school teachers and non-permanent teachers constitute 14% and 25.8% of this total respectively. In ten years the number of teachers in tertiary education has increased by 9.4%. Overall, nearly 90% of these staff are deployed in universities.

The state is the principal funder of higher education, around 72% in 2009, while household contributions have risen to 9%. In September 2009, the number of students receiving assistance rose sharply following the raising of the income ceilings for the award of grants: just over 626,000 students, representing 36% of the population, benefited from direct financial assistance. In total, financial and social assistance for such students exceeds €5.4bn, as against €3.5bn in 1995 (at constant prices).

By devoting 1.4% of GDP in 2007 to Higher Education, France is positioned one tenth of a point above the average for OECD countries (1.5%) and in thirteenth place overall, far behind the United States (3.1%) and Canada (2.6%).

Rising numbers of students thanks to the steady attractiveness of provision, especially for foreign students.

The *baccalauréat* success rate continues to increase and reached 88.9% in 2009, with 539,000 holders. The percentage of a given generation holding the *baccalauréat*, which surpassed 60% in 1995, has now reached 66%. While differences in terms of pursuing further education based on the kind of *baccalauréat* obtained continue to prevail, they are tending to diminish. For the 2008 *baccalauréat* graduates of the "Panel '95" (a generation of students monitored since they joined Year 7 in 1995), the proportion of general and technological *baccalauréat* holders pursuing further education has stabilised at a high level (95% and 85% respectively), while that of vocational *baccalauréat* holders has increased significantly: 47% of them go on to higher education (nearly half through apprenticeships) — a nearly 20-point increase since 1996. In total, 53% of young people per generation go on to higher education.

In 2008, general university courses remained the primary destination of new *baccalauréat* graduates, attracting 30% against 40% in 1996. The share of traditional selective courses CPGE, IUT, [University Institute of Technology], STS {Undergraduate-level technicians preparing a BTS) remains stable. Conversely, new *baccalauréat* holders are more likely to turn to specialist schools recruiting post-*baccalauréat* students (business, engineering, arts, cultural or paramedical schools).

With 2,316,000 students enrolled for autumn 2009, enrolment in higher education showed a very marked increase (+3.7% in one year). Numbers have never been so high. This is a reflection of the increased attractiveness of higher education, including for foreign students (+4.8% between 2008 and 2009). The increase in health-related training has been particularly strong over the last five years: +22.9% in medicine, dentistry and pharmacy +11%.

Numbering 278,000, foreign students now constitute 12% of enrollees as against 7% in 1998. Students from Africa represent 44% of the foreign student body while those from Asia, whose numbers are increasing, now constitute 24%. Foreign students are proportionately more numerous on Master's and PhD courses than at Bachelor's degree level.

An improving rate of success, therefore, but progress is uneven across sectors

For certain qualifications, success in higher education is strongly influenced by the student's academic background. This is true of general Bachelor's degrees, DUT (*Diplôme universitaire de technologie*: Technological University Diploma) and BTC (*Brevet de technicien supérieur*: Higher vocational diploma.): general *baccalauréat* students have higher success rates than those taking the technological or vocational *baccalauréat*: among general *baccalauréat* students, those "on schedule" are more successful than those who are "behind schedule." By contrast, the original *baccalauréat* has little influence on success in vocational degrees, which is robust: 89% of students graduate in one year. For general 3-year Bachelor's degrees, the graduation rate is 38%, while for the two-year DUT and BTS courses the rate was 66% and 57% respectively. As for students in scientific or commercial preparatory classes, 80% of them join a *grande école* after two or three years in CPGE.

Holders of a BTS and especially a DUT increasingly go on to study at least until Bachelor's degree level, particularly thanks to the existence of vocational degrees. 45% of BTS holders and 81% of DUT holders continue their studies after this initial qualification. After a general Bachelor's degree, 63% of students go on to study at Master's level Variations between disciplines are significant: in science, law and economics, continuation rates exceed 70%: in arts, languages and humanities, they do not exceed 57%. In these disciplines, as well as basic science and STAPS (*sciences et techniques des activités physiques et sportives* - physical education and sports science and techniques), the proportion of Bachelor's degree holders preparing for teaching recruitment exams is higher than average. Among those enrolled in the first year of a Master's course (M1), 49% obtain their Master's in 3 years.

In 2009, 44% of young people born between 1979 and 1983 were higher education graduates, thus approaching the target of 50% set for 2012. While 53% of a generation has access to higher education, 19% of *baccalauréat* graduates entering higher education leave without a Bachelor's degree — around 70,000 young people per year and 9% of a given generation

Higher education open to different population groups, but differences remain across training courses

The democratisation of access to higher education continues: over half of young people aged 20 to 24 had access to higher education in 2009 against 34.5% in 1991. Access rates have doubled for children of workers and employees, though a discrepancy of 31 points with the children of management-level parents persists. On leaving higher education, inequalities between these two social groups have decreased slightly: in 2009, the children of managers were 1.9 times more likely to graduate than the children of workers, against 2.2 times more in 1999. While short technological diplomas, such as BTS and DUT qualifications, are socially very selective, universities and *grandes écoles* are much more so: 23% of the children of managers graduate from senior *lycée* or university (*baccalauréat*+5 or more) against 6.5% of workers' children.

The proportion of girls varies widely across courses. While they constituted in the vast majority on university arts and humanities courses and in IUFM (Institut universitaire de formation des maîtres: Teacher training college) (70%), as well as on paramedical or social science courses (8 out of 10), they formed the minority in more selective courses (CPGE, IUT) and particularly on science-based courses: they accounted for just over a quarter (26%) of those enrolled in engineering schools.

A higher education diploma remains an employment and career asset

For decades, possession of a *baccalauréat* +5-level qualification has proven a greater asset in terms of access to employment, employment contracts, or professional or salaried positions, than possession of a *baccalauréat* +2. The choice of training programme is nevertheless important. In terms of both employability and salary, given equal results on leaving, the advantage clearly lies with vocational courses: IUT, vocational degree, Master's and vocational Master's, business, engineering, medical or pharmacy schools.
Disparities are also substantial across the various fields of study. In 2007, arts and humanities research Master's graduates had an above-average unemployment rate (13% against 8%) and a median wage close to that of industrial BTS or DUT graduates (€1,450).

A similar situation applies to the employability rates of Master's students In 2009, two and a half years after qualifying, the employment rate for Master's graduates is 91.4%. Among those employed, 80% have management jobs or intermediate professional roles.

It is graduates in law, economics, management, science, technology and medicine — especially information technology — who best integrate the labour market, with a rate of 92%, as against 90% in humanities and social sciences and 87% in arts, humanities and languages.

Since 2000, research training has been carried out in graduate school doctoral courses via three-year thesis preparation courses in principle, with the number of doctoral students, the breeding ground for research, growing by 9% between September 2000 and September 2009, while the number of PhDs awarded between September 2000 and September 2009 rose by 44%; the majority of these doctorates (59%) being in the sciences.

A robust research campaign in the context of heightened global competition

Domestic expenditure on research and development (GERD) in France rose in 2008 to €41.1bn, double 1981 levels (at constant prices) and representing 2.11% of Gross Domestic Product (GDP). France occupies 5th place amongst the 5 most important OECD countries behind Japan (3.42%), South Korea (3.37%), the United States (2.77%) and Germany (2.64%) and ahead of the UK (1.77%). In 2009, GERD reached €42.1bn (2.21% of GDP).

Research is mainly undertaken by companies, who carried out 63% of R&D in France in 2008, and financed 54% of the work. Domestic expenditure on public sector R&D amounted to €15.3bn in 2007 and was provided mainly by research organisations and higher education institutions. GERD within companies accounted for €25.8bn in 2008, over 50% of which was focused on five research sectors: automotive, pharmaceutical, aerospace, chemicals and electronic components. Moreover, companies devoted a significant part of their GERD to cross-cutting areas such as software or new materials development, nanotechnology, biotechnology and the environment.

The companies receive State support for their endeavours in the form of direct aid, cooperation with government agencies in civil or military domains and tax measures such as the Research Tax Credit (RTC) or the status of Young Innovative Company (YIC). In 2008, 12% of the R&D conducted internally by companies was financed by public resources and total RTC reached €4.3bn. From this point of view, France is no different from other OECD countries, where tax measures to support private research are increasing, reflecting a greater competitiveness between countries in terms of attracting business R&D.

Between 2003 and 2008, the number of researchers grew rapidly (+19%) totalling 229,100 in full-time equivalent (FTE) positions, taking France to third position in the EU after Germany and the United Kingdom. This increase was stronger in companies (+29%) than in public administration (8%); in 2008, 56.7% of researchers were in companies. Women constituted 31% of research staff in 2008. They were less numerous in companies (24%) than in administration (40%). They also constituted a smaller proportion of researchers (27%) than of support staff (38%). Researchers and support staff totalled around 388,300 FTE in 2008.

International competition is evident in the field of publications and patents. In 2008, France's share in world production of scientific publications was 4.2%, as was its share of citations over two years. Both rates have declined since 1999, notably due to the arrival of new countries on the international science scene. France occupies 6th place in the world share of scientific publications. The breakdown by discipline is a balanced reflection of the global situation, apart from a strong specialisation in Mathematics.

France ranks 4th worldwide in the European patent system with a specialisation in "machinery/mechanical engineering/transport" and 8th in the world in the U.S. system of patents, with a specialisation in "pharmacy/biotechnology" and "chemistry/ materials". In both systems, France's global share has been declining since 1994, due to the emergence of new countries.

At European level, French research is involved in 53% of the projects of the 7th Framework Programme for R&D (FP7) and coordinates over a fifth of these projects. France is very active in the aeronautics, space and nuclear fields. It thus has the third country strongest presence in FP7 projects, behind Germany and the United Kingdom.

Clusters in 2010

Competitive clusters

- Global clusters
- Internationally-oriented clusters

Key higher education institutions

- Universities
- Multi-polar universities
- Autonomous universities
- Autonomous Universities of Technology
- Autonomous National Polytechnic Institutes
- *Grands établissements*

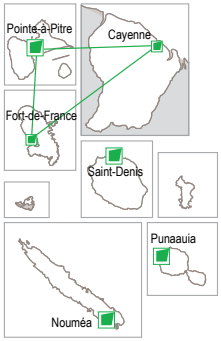
Competitive Clusters, PRES, RTRA, CTRS and the main teaching institutions fall under the urban unit in which their head offices are located.
(or under the relevant commune in the case of Ile-de-France)

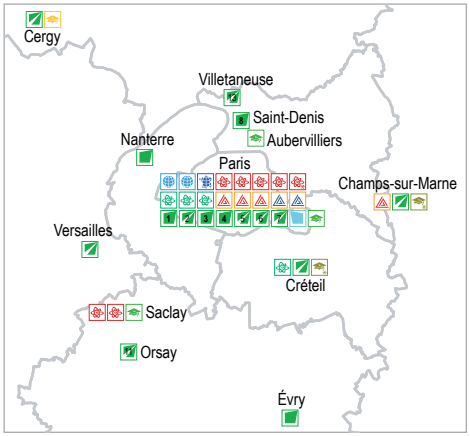
Scientific cooperation schemes

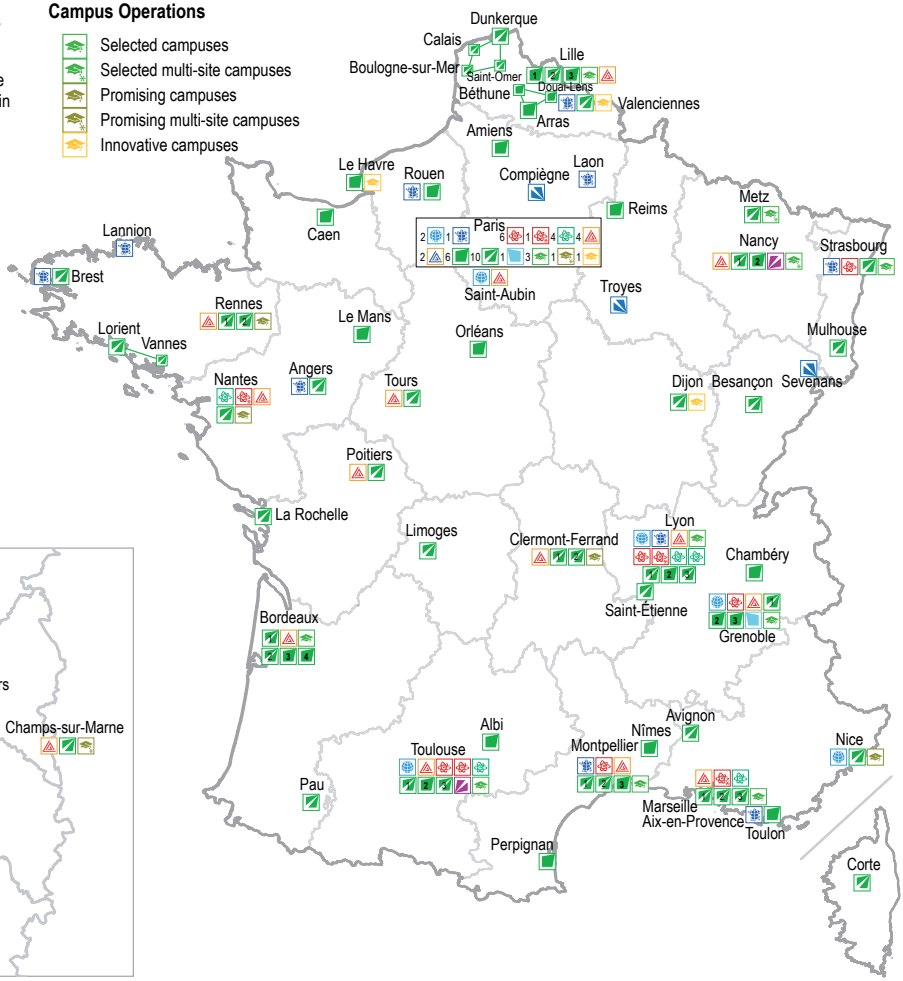
- Advanced Thematic Research Networks - RTRA
- Multi-polar RTRA
- Thematic Centres and Networks for Research and Medical care – CRTS and RTRS
- Centres for Research and Higher Education with EPCS status - PRES
- Centres for Research and Higher Education with FCS status - PRES

Campus Operations

- Selected campuses
- Selected multi-site campuses
- Promising campuses
- Promising multi-site campuses
- Innovative campuses

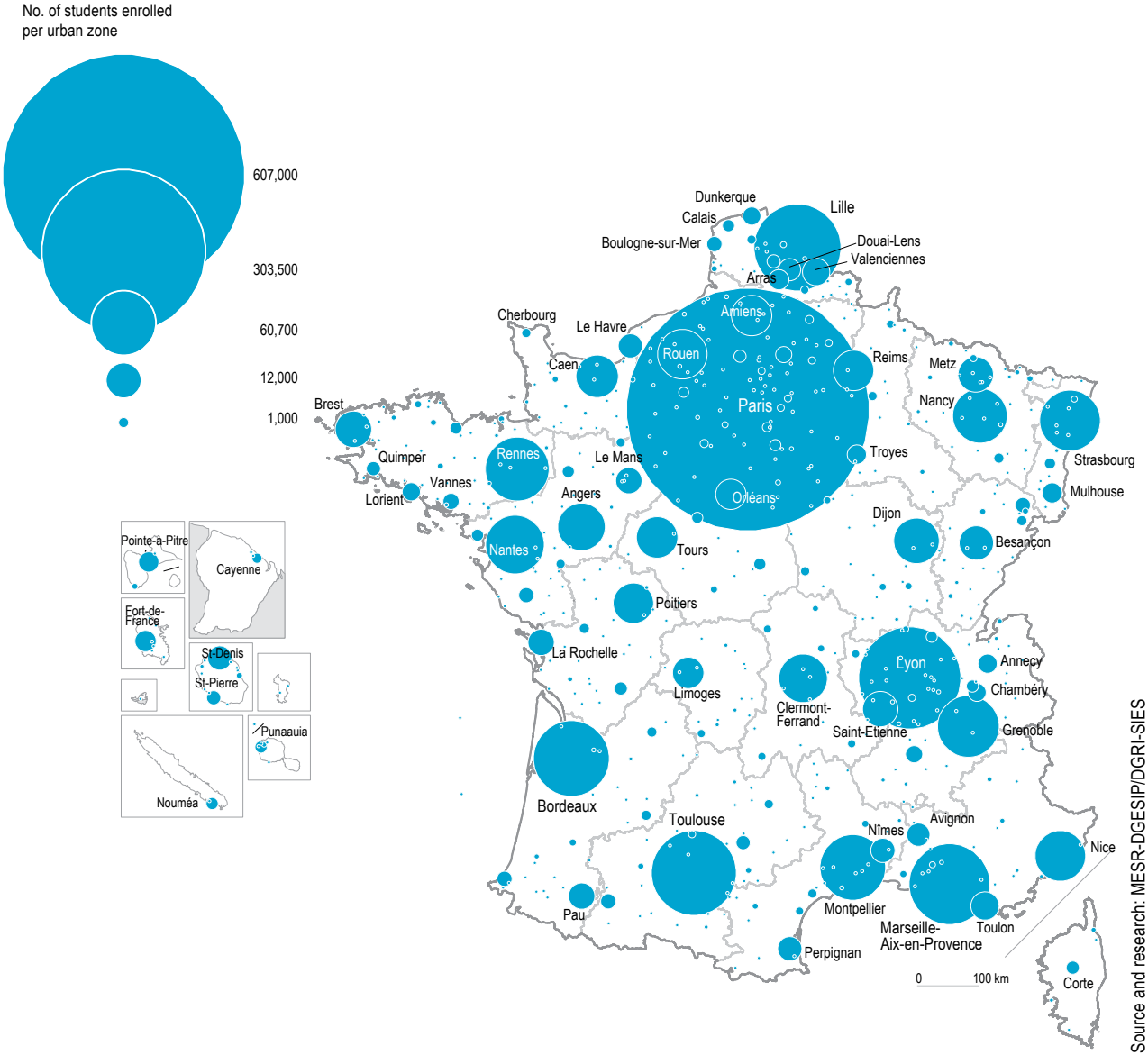




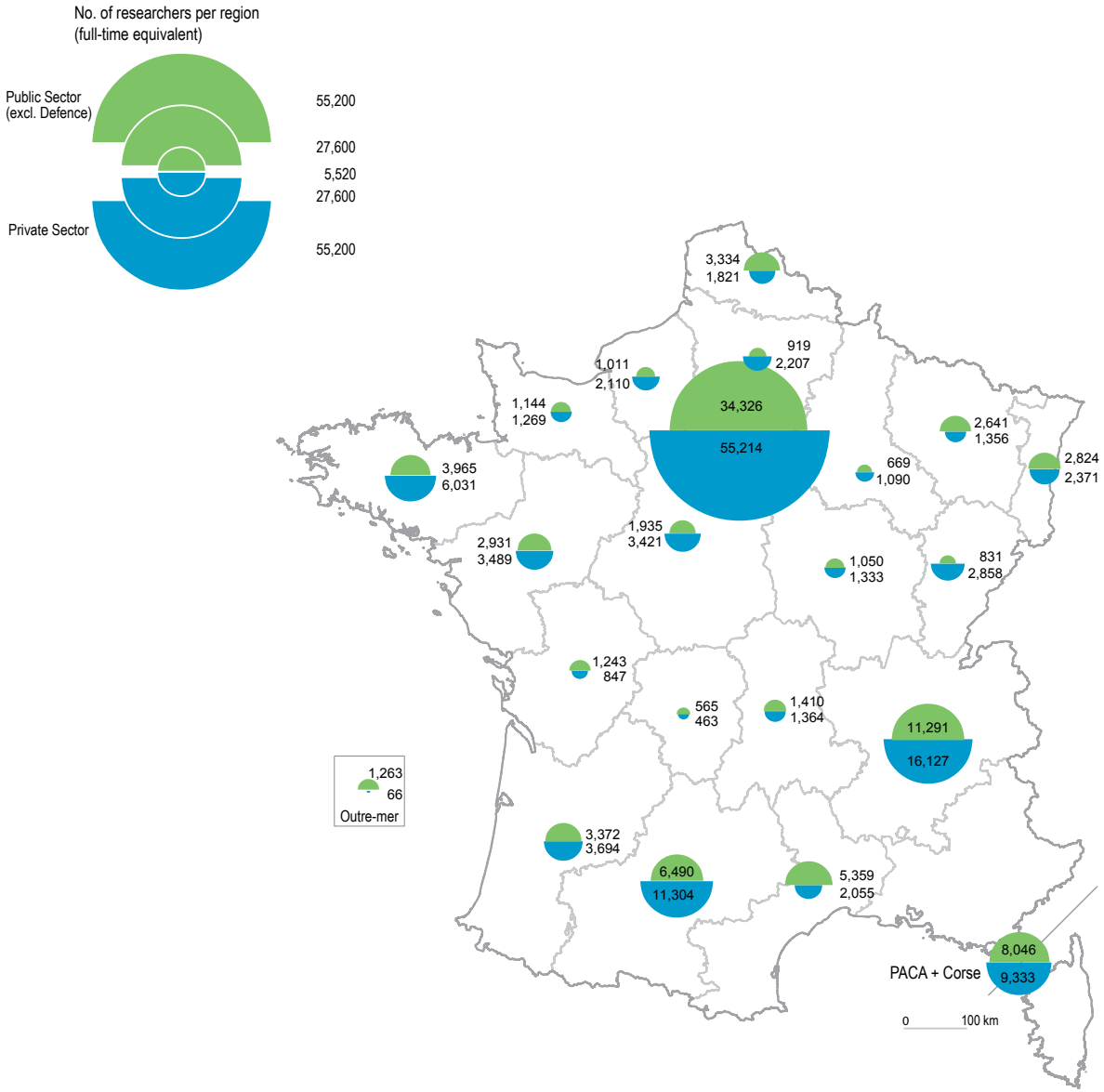


Source and research: MESR-DGESIP/DGRI-SIES

Students enrolled in higher education in 2009-2010



Numbers of researchers in 2008



Source and research: MESR-DGESIP/DGRI-SIES

Contents

Higher education

Research

01

The nation spent €26.3bn on higher education in 2009. This expenditure has multiplied by 2.5 since 1980 (at constant prices).
In 2009, the average expenditure per student was €11,260 — 41% more than in 1980 (at constant prices).

In 2009, the nation (State, regional authorities, other public administrations, households and companies) spent €26.3bn on higher education, an increase of 3.4% over 2008 (at constant prices) Since 1980, expenditure on higher education has increased sharply, by around 3.2% per year on average. Its share in domestic education expenditure rose from 14.6% in 1980 to 19.9% in 2009 (*Table 01*).

This increased rate of growth, particularly manifest since 2006, is partly due to a larger budget allocation, and partly to the broadening of scope to include all university research activities, a reassessment of social security contributions disbursed and, lastly, to a cost review of medical and social services training programmes which now come under the aegis of regional authorities.

Over the entire period, gross domestic expenditure on higher education multiplied by 2.5 at constant prices (*Graph 02*). Despite this substantial increase, average expenditure per student increased by only 41.1% (allowing for breaks in the sequence in 1999 and 2006) because of the near-doubling of student numbers. At the same time, average expenditure per secondary education student increased by 64.6%.

Average expenditure per student reached €11,260 in 2009 (*Graph 04*). The average cost per student varies a great deal across the various education options (*Graph 02*). It ranges from €10,220 per year for a student in a public sector university to €14,850 for a student in CPGE. The average cost per student studying at an IUT can no longer be quantified since application of the LOLF (French Constitutional by-law on budget acts), because university allocations are now lumped together. This also applies to other affiliated institutes

The theoretical cost of 18 years of education without repeating a year up to Bachelor's degree level was an estimated €141,900 in 2009, while 17 years in education leading to a BTS costs the nation €138,700. Total expenditure comprises 70% on personnel, particularly teaching personnel (49%) (*Graph 03*).

The State plays the majority role in funding higher education (around 72.4%); the share allocated by regional authorities is rising — currently 9.8%, while that of households stands at.9.0% (*Table 01*). Certain direct or indirect subsidies funded by the French State for the benefit of students or their families are not taken into account in DEE on higher education: they concern tax benefits (increase in dependents' allowance set against tax) or expenditure not directly linked to student status (housing benefit). Taking these into account (except social security payments) would increase the nation's average cost per student in 2009 from €11,260 to €12,520.

Figures for the most recent year's expenditure are provisional.
Domestic education expenditure for higher education includes all expenditure on metropolitan French and DOM private and public institutions for education and related activities: academic works, administration, supplies, academic libraries, pay for education staff training, etc. It does not include continuing education or, until 2006, the execution and funding of university research (it nevertheless funded the salaries of teaching-researchers).
Since 2006, due to the new form of the budget act within the LOLF framework, all university research costs have been included (staff, operating and investment costs) in addition to all costs incurred by libraries. There was therefore a break in the sequence in 2006, in addition to another in 1999 due to the reform of education expenditure..

Source: MEN-MESR-DEPP.
Scope: Metropolitan France +DOM

01 Expenditure on higher education

Metropolitan France +DOM

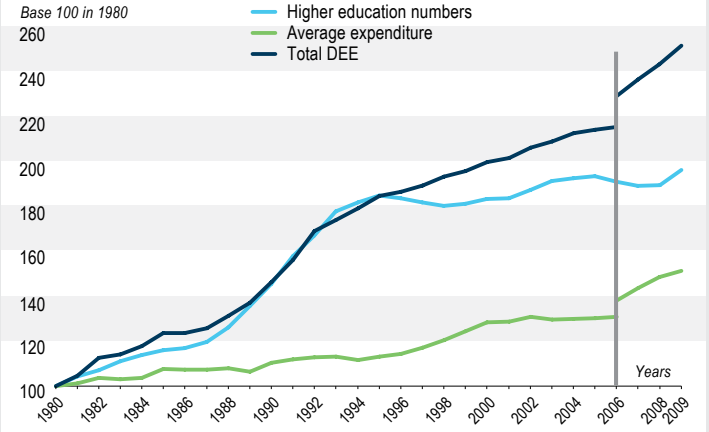
	1980	1990	2000	2008	2009
DEE on higher education (1)					
at current prices (€ billions)	4.2	11.2	17.5	25.3	26.3
at 2009 prices (€ billions)	10.5	15.3	20.9	25.4	26.3
Percentage of DEE (%)	14.6%	16.4%	16.7%	19.5%	19.9%
Average expenditure per student (1) at 2009 prices (in euros)	7,450	8,190	9,540	11,060	11,260
Average expenditure per student including social and fiscal measures (2) at 2009 prices (in euros)				12,270	12,520
Structure of initial funding (%) (3)					
State			78.5%	72.1%	72.4%
of which MEN and MESR			*68.2%*	*64.0%*	*64.2%*
Local authorities			5.2%	10.1%	9.8%
Other public administrations (4)			1.3%	0.8%	0.8%
Business			5.8%	8.5%	8.2%
Households			9.2%	8.5%	8.8%

(1) DEE was reassessed (see explanatory note opposite) for the whole of the period.
Average expenditures per student were reassessed only after 1999.
(2) That includes the allocation de logement social (ALS or special accommodation benefit), the state share of aide personnalisée au logement (APL or personalised housing benefit), increase in dependents' allowance sett against tax and reductions in taxes on tuition fees.
(3) The structure of initial funding for higher education was reassessed as of 2003.
(4) Including consular chambers (CCI, chambers of trade, chambers of agriculture)

Source: MEN-MESR-DEPP

02 Comparison of evolution in DEE, average expenditure and higher education numbers (base index 100 in 1980, 2009 prices)

Metropolitan France +DOM

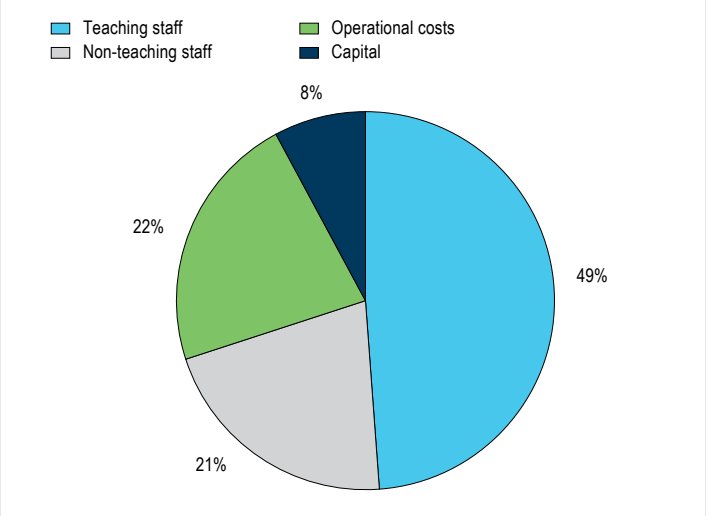


Sequence interrupted in 2006, see explanatory note opposite

Source: MEN-MESR-DEPP

03 Nature of expenditure on higher education in 2009 (%)

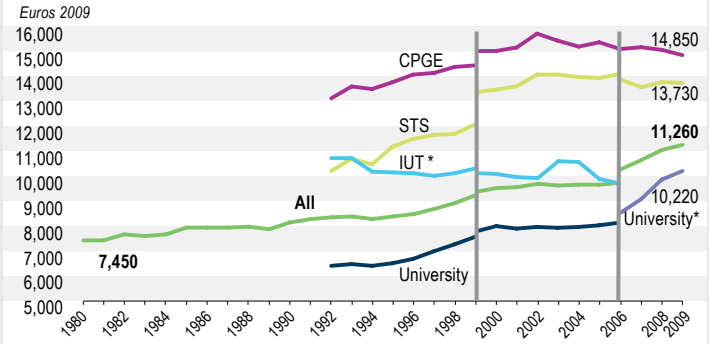
Metropolitan France +DOM



Source: MEN-MESR-DEPP.

04 Trends in average expenditure per student at 2009 prices (1980-2009)

Metropolitan France +DOM



The graph shows two breaks in the series: in 1999, a break due to the restructuring of education expenditure (Metropolitan France +DOM); and in 2006, due to modifications in the State's budgetary and accounting rules (LOLF).
* Following the LOLF reform, it is no longer possible to identify expenditure on IUTs, which, since 2006, have been integrated under university expenditure

Source: MEN-MESR-DEPP

02

In 2007, at 12,773 dollar equivalents per student and 1.4% of PIB, French expenditure on higher education was situated around the OECD average.

It is not easy to make international comparisons concerning education expenditure due to the demographic and socio-economic diversity of the various countries and the specific nature of national education systems. In higher education, such difficulties are compounded by the heterogeneous nature of educational systems at this level. However, it is possible to appraise the situation in France by way of a few general indicators.

The indicator detailing education expenditure as a percentage of gross domestic product (GDP) provides the most global evaluation of the effort national authorities actually dedicate to their education system. In 2007, France devoted 1.4% of GDP to higher education, earmarked for educational institutions, placing it 13th among the 28 OECD countries to provide this indicator (*Graph 01*). Investments by practically all European countries in higher education amount to between 0.9% (Italy and Slovakia) and 1.7% (Finland and Denmark) of GDP. Only three countries clearly go well beyond this limit: South Korea with 2.4%, Canada with 2.6% and the United States with 3.1%. France is positioned slightly above the average for OECD countries (1.5%), ahead of European countries such as Italy (0.9%), Germany (1.1%) or Ireland (1.2%) but below the Netherlands (1.5%), Portugal (1.6%), and three Northern European countries: Sweden, Finland (1.6%) and Denmark (1.7%).

If we now compare annual expenditure per student in the different countries, a change in country rankings takes place with respect to the previous indicator (*Graph 02*). In 2007, the United States stood out clearly in terms of their high level of expenditure (27,010 $PPP), followed by Switzerland (20,883 $PPP), Canada (20,278 $PPP),and three Nordic countries (Sweden, Norway and Denmark) which spend between 16,400 and 18,400 $PPP per student.
France ranks 14th out of 28 OECD countries providing data for this indicator with an expenditure of 12,773 SPPP, marginally below the OECD average (12,907 $PPP). This expenditure is higher than that of Italy, Spain and Portugal but below that of Finland, Germany, Belgium, Austria and the Netherlands.

In higher education, with an OECD average of 69.1% against 30.9%, the relative share of public funding (State, regions, departments, municipalities and other public administrations) is higher than that of private funding (households and private sources of funding such as companies). Moreover, nearly two thirds of the countries supplying data for this indicator reveal a relative share of public funding higher than the OECD average (*Graph 03*). In six countries – including Denmark, Finland and Austria – public funding amounts to over 90%. In contrast, only six countries (Australia, United Kingdom, Japan, the United States, South Korea and Chile) are over 50% funded from private sources. France, with public funding to the tune of 84.5% (15.4 percentage points higher than the OECD average) and private funding at 15.5%, is located in the mid zone of the 26 OECD countries to have provided this indicator.

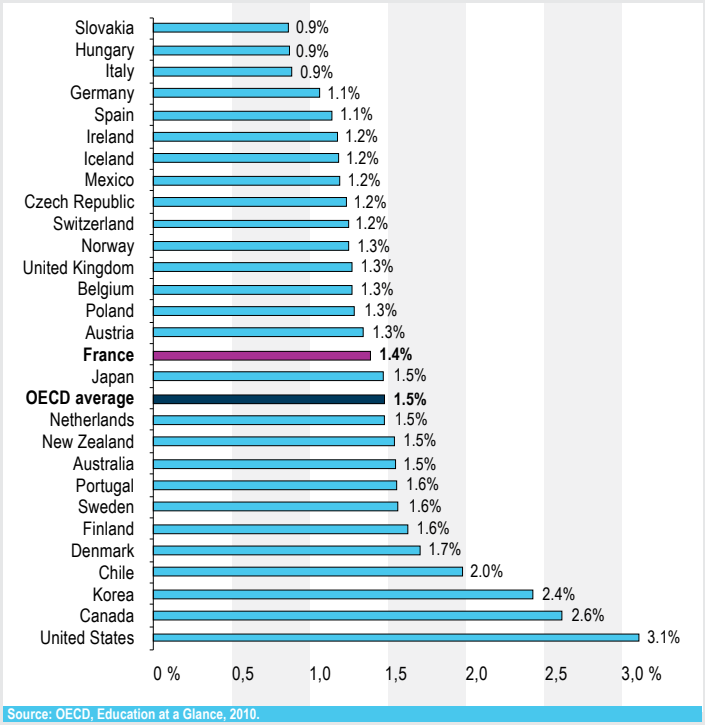
The indicator of expenditure on education, *published by the OECD is slightly different from the indicator of domestic education expenditure used in France in the education satellite account (factsheet 01): it measures "education expenditure on educational institutions" and includes neither training nor education expenditure by households outside institutions, even where such private expenditures involving goods and services related to education and/or living expenses are subsidised by state aid.*
In addition, for higher education activity, the OECD focuses on a wider research area than that used by the education accounting system as it includes all research spending earmarked for education as calculated for the OECD Directorate for Science, Technology and Industry, i.e. including research organisations.
(Eg, CNRS, INSERM...).
This indicator is shown in $PPP i.e. in United States dollar equivalents converted using purchasing power parities, which are currency exchange rates used as a common reference for expressing the purchasing power of different currencies.

Source: OECD, Education at a Glance, 2010.
Education expenditure for France, as published by OECD, is based on data from the 2007 final Education Account.

Higher education expenditure in OECD countries

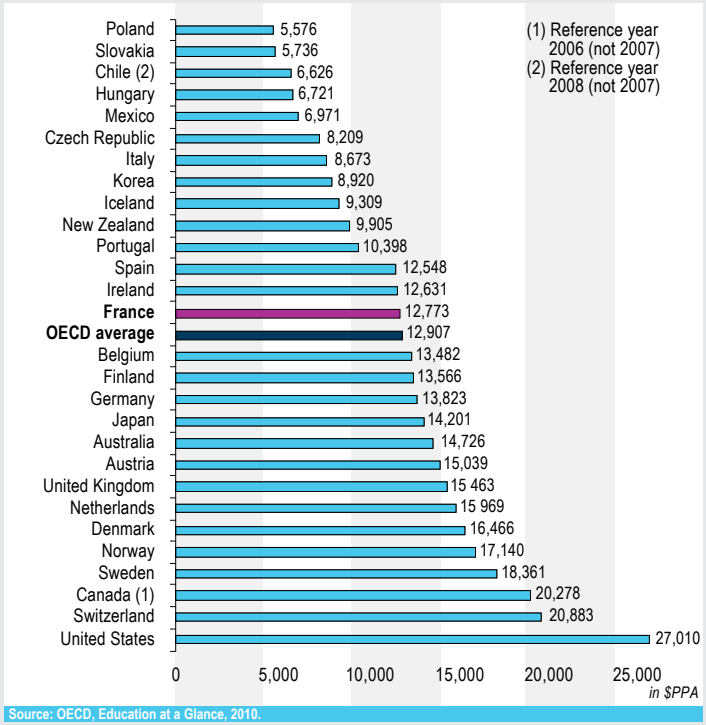
02

01 Annual expenditure on higher education institutions as a percentage of GDP (2007)



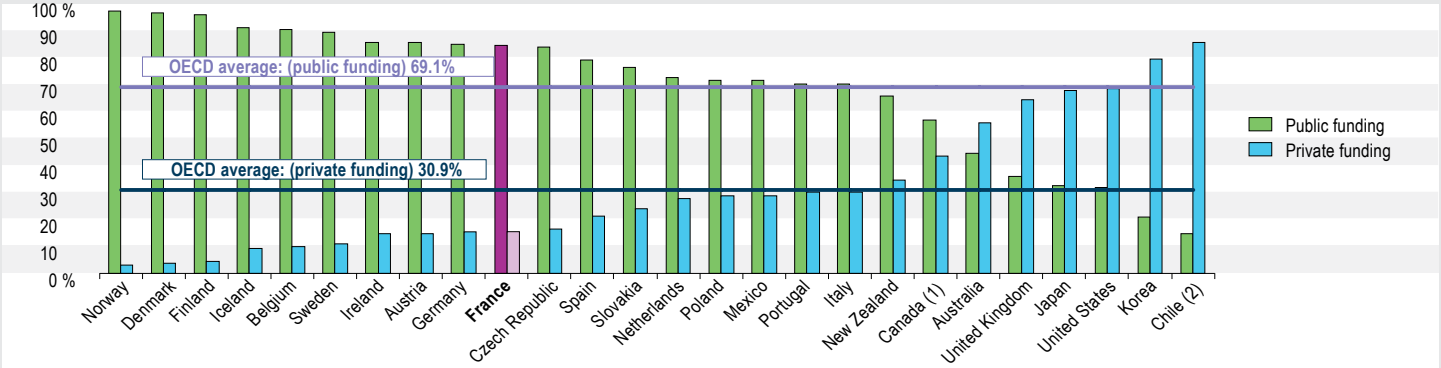
Source: OECD, Education at a Glance, 2010.

02 Annual expenditures per student on higher education institutions in $PPA (2007)



Source: OECD, Education at a Glance, 2010.

03 Relative share of public and private funding allocated to educational institutions, in terms of final funding*, in higher education (2007)



* Final funding: funding after transfers between the various economic players are taken into account. Public subsidies for households are therefore included in household expenditure and subtracted from that of public bodies.

(1) Reference year 2006 (not 2007) - (2) Reference year 2008 (not 2007)

Source: OECD, Education at a Glance, 2010.

03

At the start of the 2009 academic year, just over 626,000 students i.e. 36% of the population concerned, were benefiting from direct financial aid in the form of grants. Altogether, financial aid and social benefits in their favour amounted to nearly €5.4bn compared to €3.5bn in 1995.

Différent types of financial aid help families provide for their children's education. Grants and loans constitute the most direct forms of aid, representing an annual budget of around €1.5bn for higher education.

In higher education, 626,382 students were benefiting from financial aid at the start of the 2009 academic year (*Table 02*). The proportion of students receiving assistance increased sharply for the second consecutive year: +3.1 points in 2009, with an additional 75,250 students receiving grants. Over a third of students (35.8%) enrolled in training eligible for grants (see explanatory note) are supported, an unprecedented level. This increase is explained by that of students receiving grants on social grounds — 90% of those supported: the income ceilings for scholarships changed in 2008 leading to an increased number of beneficiaries. This increase was echoed in 2009: the allocation scales were revised very late and not all grant-holders were necessarily declared in 2008-2009. In fact, their numbers grew by 11.4% in 2008 and 7.8% in 2009. The proportion of students receiving grants on social criteria increased across all courses: +1.5 point in 2009 at the university to reach 32.5% +3.1 points in CPGE (25%) and +0.6 in STS (42.6%) where the proportion was highest (*Graph 03*). Ces données, consacrées au supérieur, ne couvrent cependant pas l'ensemble du champ des aides financières, sociales et fiscales, directes et indirectes, dont peuvent bénéficier les étudiants.

However, these data do not cover the whole range of financial aid provisions including direct and indirect social subsidies available to students. In addition to grants, loans and allowances awarded by the Ministry of Higher Education and Research, direct subsidies include the ALS and APL paid by the CNAF (*Caisse Nationale des Allocations Familiales* - National Family Allowance Fund), along with various tax benefits (tax reduction for supporting a student financially, granting of an additional half part as a household dependent for tax purposes). Indirect subsidies include CROUS (French student support agency) social benefits, subsidies for associations, exemption from registration fees for grant-holders, subsidies for university medical staff and social workers, in addition to the contributions due to the student welfare deficit. In 2009, the total of these various subsidies for students amounted to over €5.4bn, as against €3.5bn in 1995, representing an increase of nearly 55% at current prices and more than 23% at constant prices (*Table 01*).

In respect of France, international comparisons related to student subsidies published by OECD only take into account grants and interest-free loans awarded by the State, i.e. nearly €1.5bn, and therefore underestimate the student subsidy system. Accommodation (ALS and APL) and tax benefits representing some €2.9bn are not taken into account in the OECD indicators when estimating student benefits. If these benefits were included in public subsidies in the same way as grants, the share of State subsidies would rise from 7% to 21.3% of total public expenditure (*Graph 04*).

Grants based on social criteria: *allocated according to family resources and expenses. This aid ranges from straight exemption from university fees and "student social security" contributions (level 0) to the allocation of moneys amounting to €1,445 for a 9-month grant at level 1 to €4,140 for a scholarship at level 6 (academic year 2009-2010).*

Merit-based aid: *This has replaced scholarships based on academic criteria and merit grants since 2008-2009. It represents an additional grant for students receiving a grant based on social criteria (€200 per month over 9 months) and is given at the start of higher education for honours baccalauréat holders and at the start of Master's courses to the best Bachelor's degree holders.*

Allocation of social housing (ALS) and individual housing (APL): *The ALS assists categories of persons, other than families, characterised by modest levels of resources. Students are thus the main beneficiaries. As for the APL, it applies to a specific housing category, regardless of the family characteristics of occupants. Students are therefore also concerned. They received €0.2bn from the state in 2009. Since 2006, the APL and ALS have been funded by a single fund, following the merger of FNH (Fonds national de l'habitation: National Habitat Fund. and FNAL (Fonds national d'aide au logement: National Housing Aid Fund).*

Proportion of assisted students: *refers to the population concerned i.e. enrolled at university in a programme entitling students to subsidies (mainly national L (Bachelor's degree) and M (Master's) diplomas and up to the sixth year of medical studies), in the first year of IUFM, STS, CPGE or engineering schools under Ministry authority and business schools accredited by the State.*

Sources: MEN-MESR, CNAF, MEFI, OCDE.
Scope: Metropolitan France +DOM (01 to 03); various countries (04).

01 Student subsidies in millions of euros (€m)

Metropolitan France +DOM

Aid type	1995	2009	Difference 2009/1995 at constant €	Difference 2009/1995 at constant €
I - FOUNDATIONS OF THE ORGANISATION				
A - Budgetary benefits				
a - Direct benefits				
- Grants and loans (231 programme, action 1)*	927.7	1 544.1	66.4%	32.8%
- Social housing allocation (ALS)	672.6	1 113.3	65.5%	32.1%
- Personalised housing assistance (APL) State share	187.5	193.3	3.1%	- 17.7%
SUB-TOTAL a	**1,787.8**	**2,850.7**	**59.5%**	**27.2%**
b - Indirect benefits				
- Academic works	253.4	380.1	50.0%	19.7%
- Subsidies for associations and univ. medical services	12.8	22.3	74.2%	39.0%
- Compensation for grant-holders' exemption from registration fees	8.4	77.5	822.6%	636.2%
SUB-TOTAL b	**274.6**	**479.9**	**74.8%**	**39.4%**
Total A (budgetary benefits)	**2,062.4**	**3,330.6**	**61.5%**	**28.9%**
B - Tax benefits **				
- Increase in dependents' allowance set against tax for student children affiliated to their parents' household for tax purposes	942.1	1,374.0	45.8%	16.4%
- Reduction of tax on tuition fees for students pursuing higher education	125.0	190.0	52.0%	21.3%
Total B (tax benefits)	**1,067.1**	**1,564.0**	**46.6%**	**16.9%**
TOTAL STATE SUBSIDIES	3,129.5	4,894.6	56.4%	24.8%
II - OTHER AID				
c - Welfare system contributions				
- Contributions made by the different systems to funding social insurances	375.1	527.5	40.6%	12.2%
d - University contributions				
- *Fonds de solidarité et de développement des initiatives étudiantes* (FSDIE – solidarity and development fund for student initiatives)	6.1	13.2	116.4%	72.7%
TOTAL of other help c + d	381.2	540.7	41.8%	13.2%
OVERALL TOTAL	**3,510.7**	**5,435.3**	**54.8%**	**23.5%**

* Including the FNAU (Fonds national d'aide d'urgence - National Fund for Emergency Aid and the allocation d'installation étudiante (ALINE national student settlement allocation).
** 2008 Data including tax credits and loans and student salary exemptions.

Source: MEN-MESR-DEPP, MESR-DGESIP, CNAF, MEFI-DGFIP.

02 Evolution in number of students benefiting from financial aid

Metropolitan France +DOM

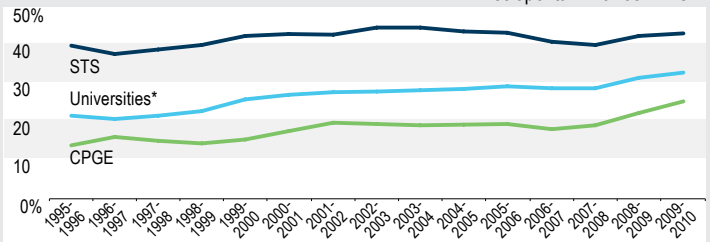
	1990-91	1995-96	2000-01	2005-06	2008-09	2009-10
Total aid (1)	**272,088**	**414,105**	**478,600**	**522,242**	**551,132**	**626,382**
% students concerned (4)	***19.7***	***24.1***	***28.6***	***30.2***	***32.7***	***35.8***
of which universities excluding IUFM (2)	185,526	280,176	335,187	369,365	375,595 (3)	407,445 (3)
% students concerned (4)	*17.5*	*21.2*	*26.6*	*28.8*	*31.0*	*32.5*
of which CPGE and STS (2):	63,251	85,269	97,989	100,925	104,491	110,849
% students concerned (4)	*25.5*	*32.3*	*35.7*	*36.5*	*36.5*	*37.8*
of which CGPE (2)		9,745	12,361	13,685	17,125	19,813
% students concerned (4)		*13.5*	*17.1*	*19.0*	*21.9*	*25.0*
of which STS (2)		75,524	85,628	87,240	87,366	91,036
% students concerned (4)		*39.4*	*42.4*	*42.8*	*42.0*	*42.6*
Grants based on social criteria	254,809	363,075	452,616	496,427	524,618	565,798
Grants based on university criteria	10,151	13,126	14,539	12,529	0	0
Merit grants	0	0	497	842	981	728
Ad hoc national fund for emergency assistance aid					19,640	53,829
Annual national fund for emergency assistance aid					6,540	7,521
Study allowances	0	0	8,090	10,461	0	0
Total grant-holders	**264,960**	**396,692**	**475,742**	**520,259**	**550,479**	**626,382**
Interest-free loans	3,825	2,788	2,858	1,983	653	0
IUFM allowances	3 303	14 625	0	0	0	0
Average aid available to students receiving grants on social criteria (in euros)		2,283	2,320	2,501	2,602	2,500

(1) Scope: Grants based on social criteria (including AIE until 1999), grants based on academic criteria (abolished in 2008), merit scholarships, study grants (abolished in 2008), interest-free loans (repealed in 2009), IUFM allowances (abolished in 1998), National Fund for emergency aid whereby 1,494 students receive ad hoc and annual allowances.
(2) Excluding study grants, interest-free loans, IUFM allowances, national fund for emergency aid.
(3) In 2008 and 2009, students enrolled in IUFMs affiliated to a university were not counted. There were 13,422 students receiving grants in the IUFMs affiliated to universities in 2009-2010.
(4) Estimated data for 1990-1991.

Sources: MESR-DGESIP/DGRI-SIES, MEN-MESR-DEPP and data taken from the AGLAE information system (dated 15 March 2010).

03 Evolution in the proportion of students holding grants per pathway

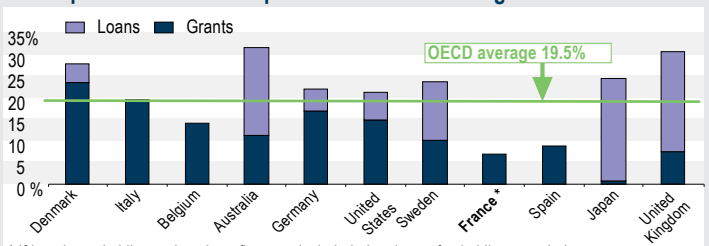
Metropolitan France + DOM



* In 2009, students enrolled at IUFMs affiliated to a university were not counted. There were 13,422 recipients in the teacher training institutes affiliated to a university in 2009-2010.

Sources: MESR-DGESIP/DGRI-SIES, MEN-MESR-DEPP and extracts from the AGLAE information system (dated 15 March 2010).

04 Public assistance for higher education (2007) as a % of public education expenditure devoted to higher education



* If housing subsidies and tax benefits were included, the share of subsidies awarded by the French State would rise to 21.3%.

Source: OECD, Education at a Glance, 2010.

04

In 2009-2010, about 150,000 persons were employed in public institutions of the Ministry of Higher Education and Research (excluding EPSTs [*Établissement public à caractère scientifique et technologique*: public scientific and technological research agency]) with 56,600 non-teachers performing administrative, technical or managerial roles.

In January 2010, 56,600 persons were engaged in administrative, technical or management roles in public higher education institutions, including independent institutions. This also included personnel engaged in training institutions and in central government service paid from the "Training Graduate and academic research" budget programme.
They represent less than a quarter of the non-teaching staff involved in the entire education system. Among these, research and training engineers and technicians (ITRF) and library and museum personnel are virtually all deployed in higher education.
Over half of these non-teaching staff (33,740 persons, or 59.6%) are ITRF (*Graph 02*), almost one in three (18,320 persons or 32.3%) is an administrative officer, technical assistant or a member of social and medical services personnel, (ATSS), while 4,450 persons (7.9%) are library and museum personnel.

Almost all of these personnel have tenure (96.2%) and among those, nearly one in two belongs to class C: 49%, or 10 points higher than the proportion this category represents in school education (*Table 01*), 55.8% of ATSS holders are administrative assistants, 45.9% of the ITRF are technical assistants and 41.9% of library staff are storekeepers. Over one agent in four is in group A (26.3%) of which seven-tenths are engineers or research and training assistants. Less than one in five is in administration and less than one in ten is a library registrar or librarians.

The average age of non-teaching staff is 44.7. The average age of management and senior management staff in central administration, general university secretaries, administrators of National Education and Higher Education is 50, while that of assistant engineers is ten years younger. Unqualified personnel are on average eight years younger than tenured staff.
In higher education, women are less prevalent than in school education: 62.1% as against 75.9%. They occupy half of Class A posts and over two thirds of category C posts (*Graph 03*). They clearly constitute the majority of administrative assistants (88.9%), nurses (97.5%) and social workers (97.4%). They are less prevalent among research engineers (32.6%) and ITRF personnel as a whole, where they represent no more than one agent in two. 69.4% of library staff, but 82.4% of specialised library assistants are women.
The rate of part-time work (11%) for non-teaching staff in higher education is generally twice as high as in the school sector. The tenured staff concerned are mostly medical personnel and social workers, administrative assistants and administrative secretaries.

The non-teaching staff identified in the payroll and management directory represent active staff, paid from the "Higher Education and Academic Research" and "Student Life" budget programmes, in higher education institutions and training institutions, but also in central government (contrary to file 9.17 of the RERS 2010).

Contrary to the previous edition, non-teaching staff based in institutions which became autonomous following the implementation of the "LRU" Law on "Freedom and responsibility of universities" have also been counted. These institutions were identified by their institution code, Staff details were extracted from management databases, the Agora directory for ATSS staff, the ITRF staff yearbook and staff directories of libraries and museums. Personnel in the "Youth and Sports" and "Research" sectors and personnel in the private sector were not counted

Source: MEN-MESR-DEPP (use in January 2010 of the payroll and in February 2010 of the management yearbooks).
Scope: Metropolitan France +DOM, public sector.

01 Administrative, technical and management staff with salaries charged to "Higher education and university" and "Student life" budgets in january 2010 *

Metropolitan France +DOM

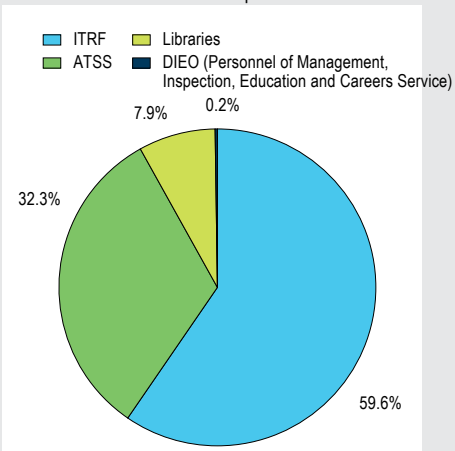
			Students	Average Age	% of women	% part-time
Research and Training Engineers and Technicians (ITRF)	**Category A**	Research engineers	1,890	45.4	32.6%	3.9%
		Design engineers	5,623	43.9	49.0%	6.7%
		Assistant engineers	2,840	40.5	44.8%	4.7%
		Total	***10,353***	***43.3***	***44.9%***	***5.7%***
	Category B	**Research engineers**	**7,879**	**44.8**	**48.8%**	**6.7%**
	Category C	Technical assistants	15,473	45.5	55.7%	7.9%
		Total (including admin. assist.)	***15,489***	***45.5***	***55.7%***	***7.9%***
	Non-tenured	Contract	24	56.0	66.7%	4.2%
Total ITRF			**33,745**	**44.7**	**50.8%**	**6.9%**
Administrative, technical, medical and social (ATSS)	**Category A**	Civil administrators	9	ns	ns	ns
		Directors and senior central administration managers	20	54.8	20.0%	0.0%
		University general secretaries	120	51.6	38.3%	0.0%
		ENES Administrators	79	50.1	59.5%	0.0%
		Attachés (ASU, ADAENES)	2,068	47.6	67.7%	9.2%
		ASU advisers	86	46.3	47.7%	5.8%
		Design & research engineers (CNRS)	202	48.5	35.6%	4.0%
		Assistant engineers (CNRS)	5	ns	ns	ns
		Social service assistants	15	56.5	100.0%	0.0%
		Total	***2,604***	***47.9***	***62.7%***	***7.4%***
	Category B	Administrative secretaries	3,957	45.9	83.8%	20.0%
		Nurses	285	50.7	97.5%	34.0%
		Social service assistants	76	47.7	97.4%	34.2%
		Technicians EN	2	ns	ns	ns
		Total	***4,320***	***46.3***	***84.9%***	***21.2%***
	Category C	Administrative assistants	9,099	45.2	88.9%	23.9%
		Technical assistants	254	48.0	40.9%	9.8%
		Lab tech. assistants	9	ns	ns	ns
		Total	***9,362***	***45.3***	***87.6%***	***23.5%***
	Non-tenured	Contract	2,007	37.1	66.4%	16.8%
		Office auxiliaries	28	34.0	85.7%	17.9%
		Total	***2,035***	***36.6***	***66.2%***	***16.2%***
Total ATSS			**18,321**	**45.0**	**81.1%**	**20.0%**
Libraries & museums	**Category A**	Library registrars	869	46.2	70.2%	3.9%
		Librarians	478	45.2	79.7%	3.8%
		Total	***1,347***	***45.8***	***73.6%***	***3.9%***
	Category B	Specialist assistant librarians	952	42.6	82.4%	6.8%
		Library registrars	285	43.0	61.8%	5.3%
		Total	***1,237***	***42.7***	***77.6%***	***6.5%***
	Category C	Warehouseman	1,863	44.3	61.0%	6.4%
Total libraries & museums			**4,447**	**44.3**	**69.4%**	**5.6%**
Management, inspection, education, guidance (DIEQ)			**131**	**37.8**	**70.2%**	**2.3%**
Total staff			**56,644**	**44.7**	**62.1%**	**11.0%**
		of which total tenured staff	54,499	45.0	61.9%	10.8%
		of which total non-tenured staff	2,145	37.1	67.0%	16.0%

* Payroll, January 2010 for non-teachers paid by state credit, yearbooks for all library staff and for ATSS and ITRF staff in autonomous institutions, February 2010.

Source: MEN-MESR-DEPP.

02 Breakdown by personnel categories

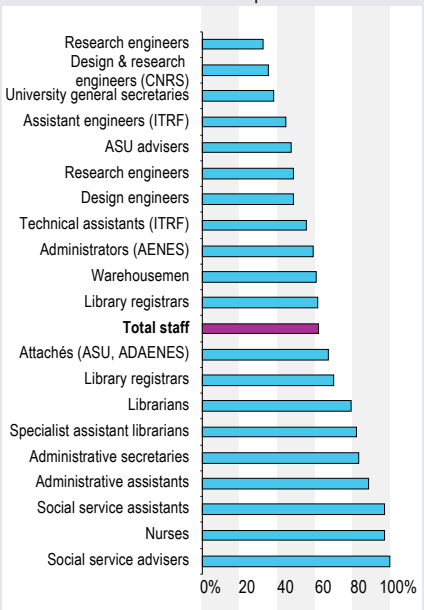
Metropolitan France + DOM



Source: MEN-MESR-DEPP.

03 Proportion of women in non-teaching staff in 2010 (%)

Metropolitan France +DOM



Source: MEN-MESR-DEPP.

05

In 2009-2010, 93,000 teachers were employed in public institutions under the Ministry of Higher Education and Research, out of a total of around 150 000 staff. Teaching staff can be divided into three categories: teachers, researchers and related personnel, secondary school teachers and non-permanent teachers. A quarter of these staff is employed in the Île-de-France area.

As of September 2009, the teaching and research force in public higher education under the supervision of Ministry for Higher Education and Research counted 93,000 teachers including 56,000 researchers and similar workers: 60.2% of the total personnel (*Graph 01a*). Secondary school teachers and non-permanent teachers represent 14% and 25.8% of this force respectively. In ten years the number of teachers in tertiary education has increased by 9.4%. Overall, 90% of personnel are assigned to universities (*Graph 01b*).
Science subjects account for around 41% of these overall personnel numbers; humanities for 30%, and law and medicine for around 14% each (*Graph 02*). In ten years the number of teachers in tertiary education has increased by 9.4%. This increase conceals disparities between disciplines: +19.6% in legal sciences, economics and management, 12.8% in the arts (including 14.9% for humanities), and +6.7% in all scientific disciplines (+10.8% for engineering science and +12.8% for mathematics and computer science). Physics is decreasing (- 9.6%).

The average ages of tenured university professors and tenured lecturers or trainees are respectively 52 years 6 months and 44 years 3 months (*Graph 03*). However, this gap is linked to the career structure: university professors are mainly recruited from among the lecturers. Over the past decade, the percentage of women has risen slowly to 19.9% among teachers and 41.5% for lecturers, an increase of about 5 points. This level is higher in the arts and pharmacy than in sciences, law and medicine. Moreover, among lecturers in the 30-39 age group, women have constituted the majority for some years, in law, the arts and health-related subjects.

Secondary school personnel serving in the higher education sector represent 14% (*Graph 01a*) or 13,000 persons. Among them, 55.7% are qualified. 75.1% of these teachers are assigned to universities, 32.2% are in IUTs, 16% in IUFMs and 8.9% in engineering schools. They mainly teach economics and management, languages and literature, history and geography, mathematics, mechanical engineering and physical education and sports science and techniques (STAPS).

A quarter of the teaching force in higher education is deployed in the three education authorities located in Ile-de-France. Over half (53.7%) of this staff works in the five major regions (Ile-de-France, Rhone-Alpes, Provence-Alpes-Cote d'Azur, Nord-Pas-de-Calais Midi-Pyrenees). This geographical distribution is almost identical to that of students.

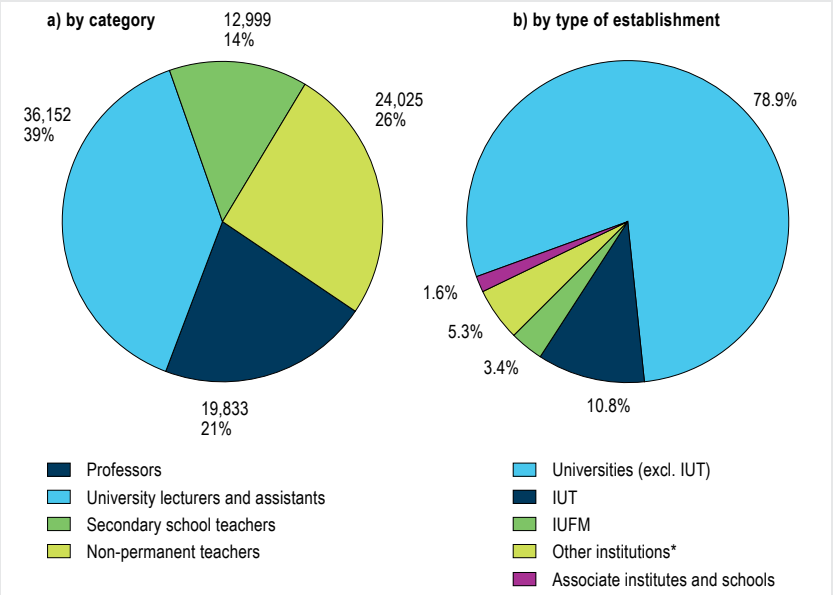
With an average of 16.2 students per teacher in higher education (*Graph 04*), France is fairly close in terms of teacher-student ratio to the OECD average (15.8). Only four countries have a much better position with fewer than 12 students per teacher: Germany, Spain, Japan and Sweden, which drops to 8.5. .

Graphs 01, 02 and 03: in May 2010, the GESUP2 management file for teachers in higher education and the survey of non-permanent teachers, conducted among higher education institutions in the public sector (HRB - Studies Office management planning) The faculty and teaching staff assessed in this way corresponds to staff in active employment, whether tenured or not, those who are posted outside their institution of employment, currently available or on leave are excluded.

Sources: MEN-MESR-DGRH et OCDE.
Scope: All of France (Metropolitan France +DOM +COM +New Caledonia), public sector (01 to 03), different countries (04).

01 Breakdown of higher education teaching personnel into categories and type of institution in 2009-2010

All of France

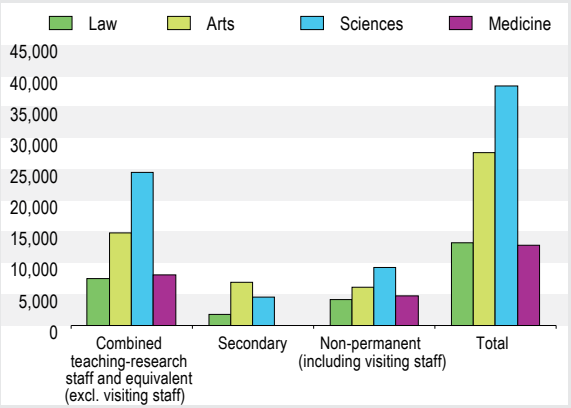


* ENI, INSA, ENS, grands établissements (public research & higher education institutions), French schools abroad, IUFM.

Source: MEN-MESR-DGRH.

02 Distribution of teaching staff active in higher education per key discipline – 2009-2010 academic year

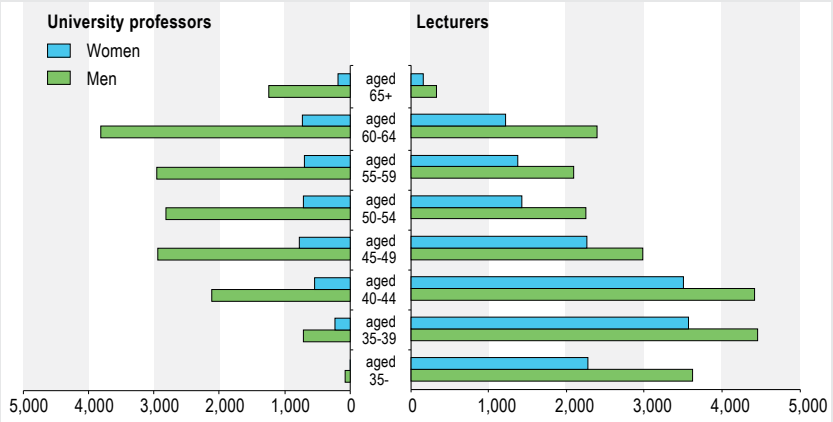
All of France



Source: MEN-MESR-DGRH.

03 Pyramid of ages of tenured faculty members active* in 2009-2010 - Breakdown by profession, sex and age group

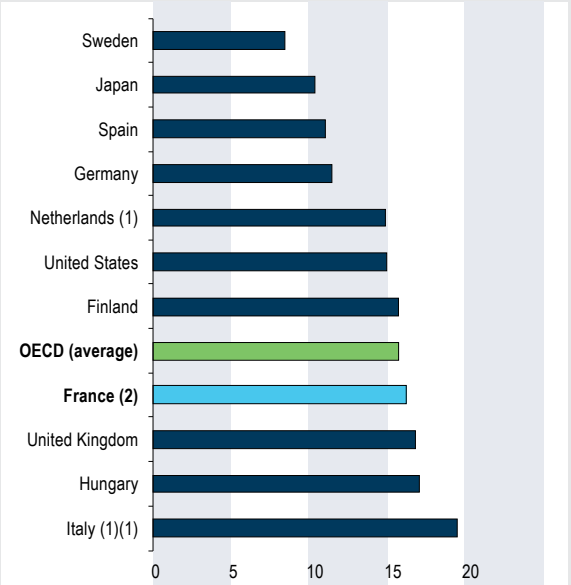
All of France



* Except for associate teachers and surplus teachers.

Source: MEN-MESR-DGRH.

04 Average number of students per higher education teacher* in 2008



(1) Public institutions only.
(2) Public institutions and contracted private institutions.
* In FTE (full-time equivalent)..

Source: OECD, Education at a Glance, 2010, based on statistics of student and teacher numbers (UOE).

06

2009 saw the recruitment of 2,659 combined teaching-research staff. Half of them qualified during the 2009 campaign i.e. just prior to this recruitment campaign. This "qualification" phase – a university competence credential valid for four years' – develops the pool of potential candidates for combined research-teaching, university professor and university lecturer positions.

Qualifying as a *professeur des universités* (PR - university professor) or a *maître de conférences* (MCF – university lecturer) is a prerequisite for candidates to the competitive exam for recruiting combined teaching-research staff. Once the Conseil national des universités (CNU – National University Council) has awarded the qualification, it is valid for four years. In 2009, the qualification campaign organised by the Ministry received 25,140 applications, whereby one person could apply for several qualifications in different disciplines (in reality, separate CNU sections) or for both the teaching and research staff bodies, but separately. The overall result in 2009 was that CNU members examined 18,956 individual applications and delivered 11,005 qualifications to 8,169 different people, i.e. 60% of the 14,603 candidates to have submitted 25,140 applications (*Graph 01*).

Only a fraction of these newly qualified people sat the competitive examination for teaching and research: in 2009, more than half of qualified PR and 40% of qualified MCF did not sit for the competition in the year following their qualification. They may do so during future recruitment campaigns according to qualitative choices regarding available positions or 'use' the qualifications for other career needs.

3,533 job vacancies to be filled by 1st September 2009 were published in the Official Journal with the aim of recruiting university lecturers and professors for higher education institutions. Between 2006 and 2009, university professor positions increased by 10.6% and those of lecturers decreased by 4.4% (but nevertheless increased by 7.6% between 2008 and 2009): an overall increase in jobs of 0.7% (*Graph 02*).

These positions were first filled through secondment or transfer. But the number of secondments is low. 5 lecturers and professors from four universities or 0.1% of the jobs offered. Although very few, transfers increased by 4.2% compared to 2008 but still only accounted for 9.9% of vacancies.

On the basis of jobs remaining unfilled after the transfer, secondment, higher aggregation and recruitment of individuals, 2,659 positions have been filled: a total of 89.9%.

Among the 744 university professors recruited, 91.5% were selected from among lecturers (*Graph 03*). The university professors recruited had an average age of 43 years and 10 months: the average age of lecturers is 33. Women made up 38.3% of the numbers (30.3% of PR and 41.4% of MCF).

As for the origins of the lecturers recruited, it is clear that the majority 32.8% were temporary lecturers, instructors or reader and 38.6% were active in research outside of higher education (*Graph 04*).

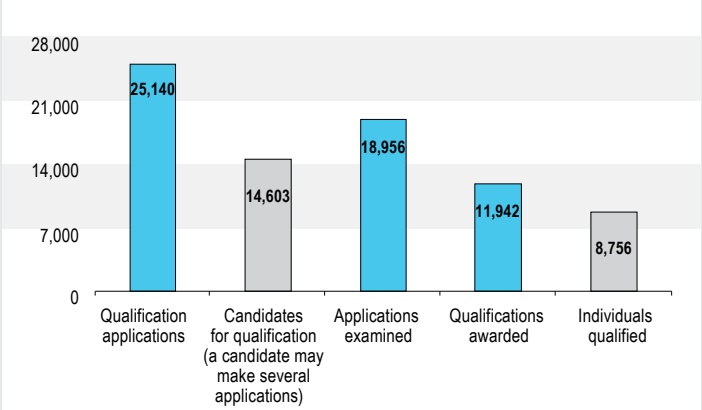
Legislation concerning the recruitment of tenured faculty specifically allows for openings to individuals of foreign nationality: 7.9% of lecturers come from European Union countries, about one point more than in 2008, with 8% from the rest of the world. The "Freedoms and Responsibilities of Universities (LRU) law, in the context of multi-year institutional contracts, requires each institution to outline the objectives it sets for recruitment of MCF who have not obtained their university Bachelor's degree in the institution, as well as the recruitment of PR who were not active immediately before their promotion to the faculty, in the role of a lecturer in their institutions. The investigation into the origin of faculty members recruited in 2009 confirmed an external recruitment rate of 76% for MCF and 43.6% for PR at national level.

The renewal of faculty members takes place in two phases: a qualification accrediting set of scientific skills in order to perform the roles of a teaching-researcher and a recruitment process allowing access to these same duties in higher education institutions.
The results of the qualifying stages and recruitment were analysed using data produced by the ANTARES application. This national application process enables links to be made between the procedures related to these operations and stakeholders and, as such, provides all the information necessary for a thorough study of each annual recruitment campaign. The data analysed here concern the 2009 campaign.

Source: MEN-MESR-DGRH ANTARES application).
Scope: All of France

01 Qualification and recruitment of combined teaching-research staff
Overview of 2009 qualifications

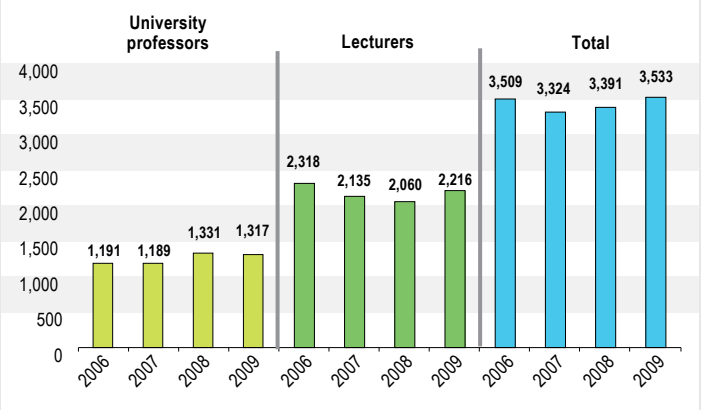
All of France



Source: MEN-MESR-DGRH.

02 Recruitment of combined teaching-research staff
2006-2009 campaigns: positions vacant

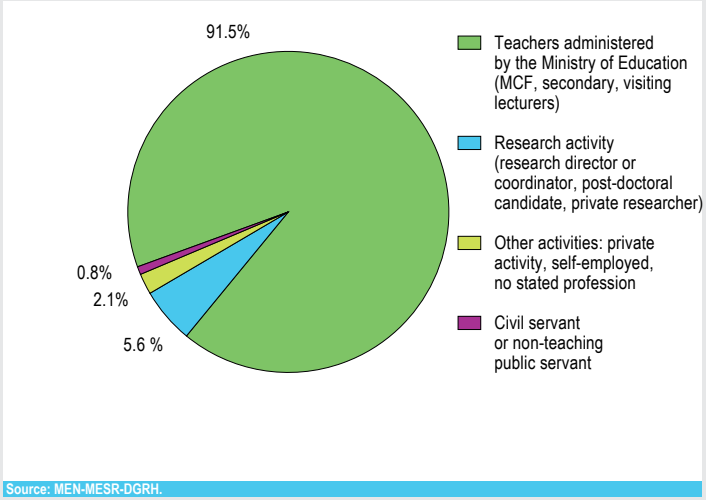
All of France



Source: MEN-MESR-DGRH.

03 Distribution of university professors recruited in 2009 by source category (%)

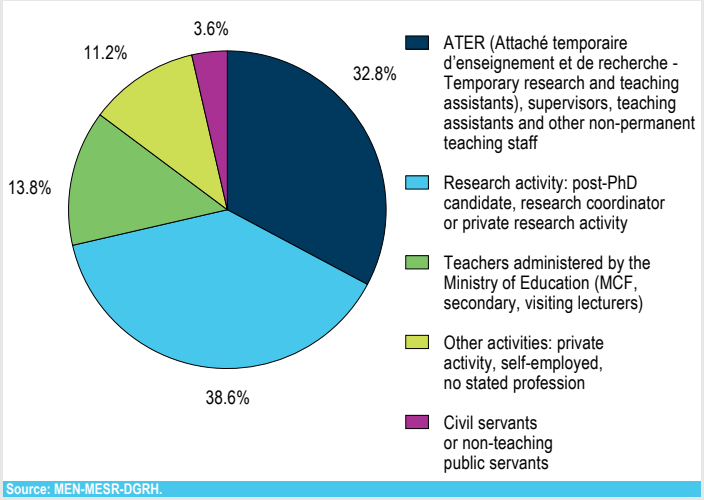
All of France



Source: MEN-MESR-DGRH.

04 Distribution of lecturers recruited in 2009 by source category (%)

All of France



Source: MEN-MESR-DGRH.

07

In the 2009 session, the success rate for the general *baccalauréat* reached 88.9%. The share of vocational *baccalauréat* holders began to rise again, with the introduction of resit exams. The parents of more than one in three general *baccalauréat* holders are managers or hold jobs in high-level intellectual professions. In 2009, 65.6% of young people of a given generation passed their *baccalauréat*.

In Metropolitan France and in the DOM, in the 2009 *baccalauréat* session, 625,713 candidates sat the exams and 539,092 gained the qualification. All streams combined, the success rate was higher than the previous year (86.2% as against to 83.5% in 2008) and indeed, in comparison with all previous sessions (*Graph 01*). Since 1995, it has increased by 11.3 points: success in the general *baccalauréat* has increased by 13.8 points, the technological *baccalauréat* by 4.3 points and the vocational *baccalauréat* by 14.6 points. In 2009, the rise in success levels was largely due to the vocational *baccalauréat*, with the introduction of resit exams for the first time in the 2009 session.

In the same period, the breakdown of *baccalauréat* holders (*Table 02*) changed in favour of the vocational streams (+80% or 53,600 more graduates) reaching 22.4% in 2009. This development came at the expense of technological categories (- 4.8% or 6,700 fewer graduates), representing 24.4% of the graduates of this session. The general stream remained stable (300 fewer graduates) with 53.2% of *baccalaureate* graduates in 2009.
The increase in the numbers of vocational *baccalauréat* holders is particularly marked in the production sector (101.6%). In the technology series, the increase of baccalaureate holders was most marked in medical and social science and technology (ST2S) (+39% or 5200 more graduates) but did not compensate for decline in science and technology management (TSG) and industrial science and technology (ITS) (- 13.9% - 14% totalling 15,900 fewer graduates). Concerning the general *baccalauréat*, the number of successful candidates decreased in the literary streams (-30.3%). On the contrary, *baccalauréat* holders were more numerous in the ES (economic and social sciences) and S (science) streams (18.2% and 6.8% respectively).
At the 2009 session, there were 53 general, 24 technological and 22 vocational *baccalauréat* holders per 100 compared to 58, 28 and 14 respectively in 1995.

Nearly one out of four *baccalauréat* holders comes from a management or high-level intellectual profession background (26.3%) making this the best represented socio-professional category (*Table 03*). This is particularly true of the general stream with more than one out of three general *baccalauréat* holders coming from such backgrounds (35.8%). Among holders of a technological or vocational *baccalauréat*, working class children are proportionally the most numerous (22.1% and 32.5% respectively) although they only represent 18.2% of *baccalauréat* holders in general.

In 2009, 65.8% of young people from a single generation gained a *baccalauréat* in Metropolitan France as against 62.6% in 2008: 35.4% in the general stream 16% in the technological stream and 14.4% in the vocational stream (*Graph 04*).

Since 1985, the annual number of *baccalauréat* holders has doubled and the proportion of *baccalauréat* holders per generation has increased by 36.4 points. This high increase is particularly due to growth in the number of general *baccalauréat* holders in addition to development of the vocational *baccalauréat* implemented as from 1987. Between 1995 and 2005, contrasting with the preceding long growth period, the proportion of *baccalauréat* holders per generation levelled off and hovered around 62%; rates from 2006 to 2008 remained around 64 then rose by 3 points in 2009.

Proportion of a generation holding a baccalauréat: *This is the proportion of baccalauréat holders in a hypothetical generation of individuals in which each age group complied with the rates of candidacy and success observed for the year under consideration. This number is obtained by calculating, for each age group, the ratio of the number of successful graduates to this age group's total population and the total of these rates per age group. The age groups taken into consideration in this calculation are not the same for the general and technological as for the vocational streams, given that the syllabus of the latter is a year longer and enjoys a rather different distribution by age, particularly among the older age groups. The calculations were based on the INSEE demographic series integrating the results of annual population censuses (set up in 2004) contained in the database in force at the end of March 2008.*

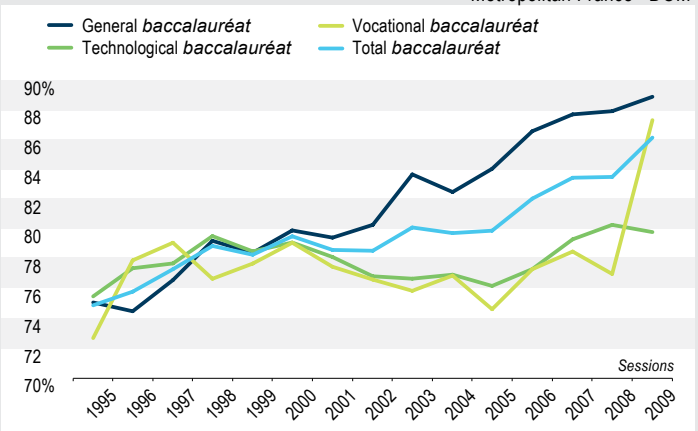
Pass rate: *is obtained by calculating the ratio of successful candidates to the number sitting the exams. All candidates taking at least one exam paper are considered to have sat the exams.*

Age: *is defined by the number of years between the year of observation and the year of birth, whatever the actual birth date.*

Source: MEN-MESR-DEPP.
Scope: Coverage: Metropolitan France or Metropolitan France +DOM.

01 Trends in baccalauréat pass rates since 1996 in the different streams

Metropolitan France +DOM



Source: MEN-MESR-DEPP.

02 Trends and breakdown of *baccalauréat* holders between the 1995 and 2009 sessions

Metropolitan France +DOM

	1995 session		2009 session	
	Graduates	%	Graduates	%
General *baccalauréat*				
ES	76,555	15.5%	90,466	16.8%
L	71,460	14.5%	47,765	8.9%
S	139,031	28.2%	148,531	27.6%
Total general streams	**287,046**	**58.3% ***	**286,762**	**53.2% ***
Technological *baccalauréat*				
STI	35,217	7.2%	30,281	5.6%
STG	78,894	16.0%	67,918	12.6%
ST2S (formerly SMS)	13,337	2.7%	18,542	3.4%
Other technological streams	10,819	2.2%	14,861	2.8%
Total technological streams	**138,267**	**28.1%**	**131,602**	**24.4%**
Vocational *baccalauréat*				
Production	26,218	5.3%	52,845	9.8%
Services	40,878	8.3%	67,883	12.6%
Total vocational streams	**67,096**	**13.6%**	**120,728**	**22.4%**
Total	**492,409**	**100.0%**	**539,092**	**100.0%**

* The sum rounded up may differ from the total of all rounded-up sums.

Source: MEN-MESR-DEPP.

03 2009 pass rates according to social background (%)

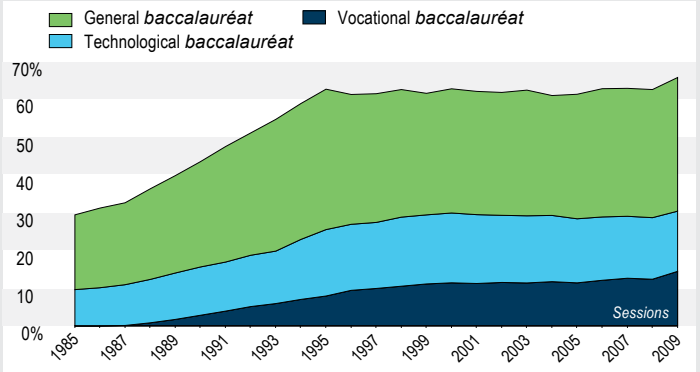
Metropolitan France + DOM

	Distribution of successful candidates (%)			
	General bac	tech-nolo-gical bac	Voca-tional bac	All
Socio-professional categories included:	**97.4**	**92.4**	**74.4**	**91.0**
Farmers	2.4	2.1	2.2	2.3
Skilled craftsmen, sales/retail, company directors	9.3	9.8	12.1	9.9
Managers, high-level intellectual professions	35.7	16.1	10.4	26.3
Intermediate professions	17.2	16.8	11.7	16.1
Employees	15.0	20.2	16.4	16.5
Working-class	11.9	22.2	32.4	18.2
Retired	2.0	2.8	4.8	2.7
Others with no stated profession	6.5	10.0	10.0	8.0
All	**100.0**	**100.0**	**100.0**	**100.0**

Source: MEN-MESR-DEPP.

04 Proportions of baccalauréat holders per generation (1985-2009) (%)

Metropolitan France



Note: the proportion of baccalauréat holders in a generation has been recalculated based on the new population census (INSEE). These values may therefore differ from those published until 2009.

Source: MEN-MESR-DEPP.

08

85% of new *baccalauréat* holders immediately enrol in higher education. They are less likely to opt for general university courses than for the various schools recruiting *baccalauréat* holders. Vocational *baccalauréat* holders are increasingly likely to continue studying, particularly via work-based training. All in all, 53% of young people per generation go on to higher education.

In 2008, nearly 90% of new *baccalauréat* holders continue their studies after obtaining their *baccalauréat* (*Table 1*): 85% go on to higher education and a minority (4%) opt for other channels, particularly vocational training or study abroad. While universities remained the primary destination in 2008, they attracted no more than three in ten new *baccalauréat* holders, as against four in ten in 1996. *Baccalauréat* holders are opting less for traditional selective courses (CPGE, IUT, STS), than for those special schools recruiting in a variety of fields: enrolment in business, engineering, art, cultural or paramedical schools (or preparatory classes for entry into such schools) has doubled over the past ten years.

The loss of interest in university particularly affects general *baccalauréat* holders, regardless of their discipline. But trends in the career choices of S *baccalauréat* holders (*Graph 02*) indicate that the decrease only affects Bachelor's degree courses, and particularly scientific disciplines: only one out of ten S *baccalauréat* holders took a Bachelor of Science in 2008 as against a quarter in 1996. At the same time, they more often opt for the first year of medicine and pharmacy (PCEM or PCEP) courses.
As with general *baccalauréat* holders, technological *baccalauréat* holders are proportionally less likely to enrol in university and those passing the *baccalauréat* without honours, still the most numerous group to continue studying, are also most affected by this decline (*Table 01*). The change is less in favour of short technological courses (at IUT and STS) — the main facilities for technology graduates in higher education — than of schools recruiting after the *baccalauréat*, particularly in the paramedical sector.
While numbers of technical *baccalauréat* holders pursuing further studies are settling, those of vocational *baccalauréat* holders are witnessing a substantial rise: 47% of them (and 58% of those to have passed the *baccalauréat* with honours) join higher education, an increase of almost twenty points since 1996. The bulk of the studies are pursued at STS level: four in ten vocational *baccalauréat* holders prepare for a BTS the following September, around 50% of them through work-based learning. One vocational *baccalauréat* holder in five enrols in higher education in this way, via an apprenticeship or vocational contract.

Altogether, 53% of young people per generation go on to higher education in the academic year after passing the *baccalauréat* or, in the case of some, a year later. This rate is higher than 80% for children of teachers and managers but below 50% for children with employee or working class parents (*Graph 04*).

The problem of organisation is the main difficulty encountered by all graduates during their first year of graduate study, especially by those enrolled in medicine or CPGE (*Table 03*). They are also the most likely to report difficulties in pursuing their studies. New Bachelor's degree students or those studying a short technology course often highlight their lack of interest in the tuition provided.

*The **1989 panel,** representative of 1/30th of the school population in Year 7 and SES in September 1989, in public or private institutions of metropolitan France and overseas departments, was formed by selecting all students born on the 5th of each month. Most of the students reached baccalauréat age in 1996 with the others following between 1997 and 1999: their educational careers were first monitored after the baccalauréat, except for students who were taught in the DOM.*
*The **1995 panel,** representative of 1/40th of the school population in Year 7 and SES (Specialised Education Section) in September 1995 in the public or private institutions of Metropolitan France, was formed by selecting all students born on the 17th of each month (except March, July and October). The majority of students obtained their baccalauréat in 2002, with the others following between 2003 and 2005: they were all interviewed individually during each year of their educational career, regardless of the nature and mode of the training, at the latest until they achieved until they achieved baccalauréat+5 level. Their pathways are still under observation.*
*The **2008 panel** was formed in 2008 by selecting from baccalaureate files a sample off 12,000 graduates who enrolled in 2007-2008 at a public or private institution in metropolitan France (excluding the Ministry of Agriculture), based on the following criteria: baccalauréat type, age and level of baccalauréat, and sex. These baccalauréat holders were interviewed once between April and July 2009 regarding their situation in the September following their baccalauréat, choice of Bachelor's degree, motivations and the experience of their first year of graduate study.*

Sources: MEN-MESR-DEPP et MESR-DGESIP/DGRI-SIES (1989, 1995 and 2008 panels).
Scope: Metropolitan France.

Further studies for new *baccalauréat* holders 08

01 The progress of *baccalauréat* holders in 2008 depending on type of *baccalauréat* and the level attained (%)

Metropolitan France

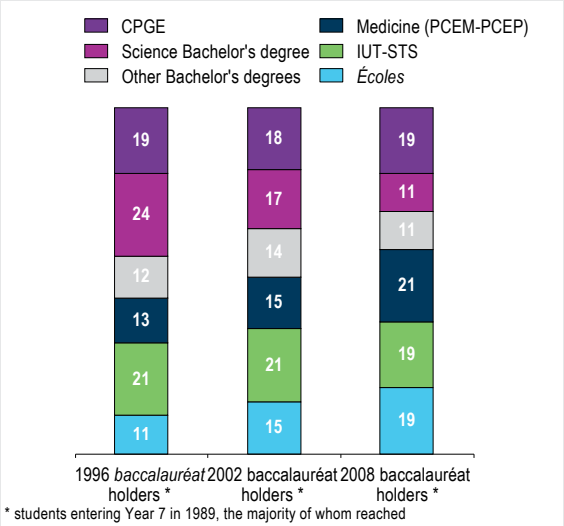
		CPGE	1st university cycle	IUT	STS	Other higher education courses **	Total further education	*Including: work-based study*	Other courses not incl. in higher education	Total further education
General *baccalauréat* holders	With honours	23	42	10	4	18	97	1	2	1
	Without honours	2	50	12	12	16	92	2	3	5
	All 2008	**13**	**46**	**11**	**8**	**17**	**95**	1	**2**	**3**
	1996 recall*	*12*	*56*	*10*	*9*	*9*	*96*	*1*	*2*	*2*
Technological *baccalauréat* holders	With honours	5	9	17	47	15	93	9	3	4
	Without honours	-	15	7	46	13	81	10	5	14
	All 2008	**2**	**13**	**10**	**46**	**14**	**85**	8	**4**	**11**
	1996 recall*	*1*	*20*	*11*	*49*	*6*	*87*	*5*	*4*	*9*
Vocational *baccalauréat* holders	With honours	-	3	2	51	2	58	30	7	35
	Without honours	-	6	1	29	2	38	19	8	54
	All 2008	**-**	**5**	**1**	**39**	**2**	**47**	20	**8**	**45**
	1996 recall*	*-*	*6*	*1*	*21*	*1*	*29*	*12*	*8*	*63*
All *baccalauréat* holders	**All 2008**	**8**	**31**	**9**	**23**	**14**	**85**	6	**4**	**11**
	1996 recall*	*8*	*40*	*9*	*21*	*7*	*85*	*4*	*3*	*12*

* students entering Year 7 in 1989, the majority of whom reached *baccalauréat* age in 1996, with the remainder between 1997 and 1999 (1989 panel).
** schools of business, engineering, paramedical studies, the arts

Source: MESR-DGESIP/DGRI-SIES (panel of *baccalauréat* holders 2008 and post-*baccalauréat* monitoring of panels of students entering sixth grade in 1989).

02 Directions chosen by S *baccalauréat* holders in higher education (%)

Metropolitan France



* students entering Year 7 in 1989, the majority of whom reached baccalauréat age in 1996, with the remainder between 1997 and 1999 (1989 panel).
** students entering Year 7 in 1995, the majority of whom reached baccalauréat age in 2002, with the remainder between 2003 and 2005 (1995 panel).

Source: MESR-DGESIP/DGRI-SIES (panel of baccalauréat holders 2008 and post-baccalauréat monitoring of panels of students entering sixth grade in 1989).

03 Difficulties encountered by *baccalauréat* holders in the 1st year of higher education by course (%)

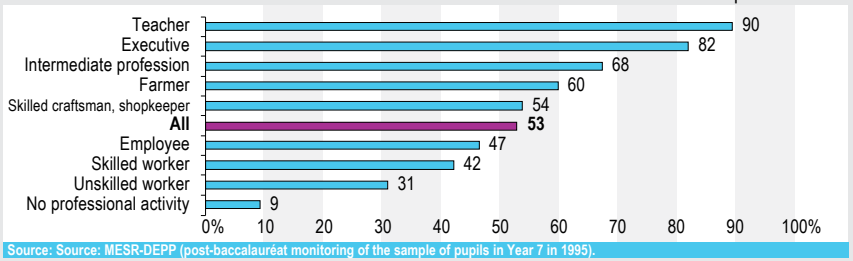
Metropolitan France

	All new students	PCEM - PCEP	CPGE	Bachelor's degree	IUT	STS
Difficulties in self-organising for study	38	57	51	42	34	32
Lack of interest in the subjects studied	32	22	21	38	35	36
Difficulty in following classes	29	45	39	31	26	29
Financial difficulties	24	18	11	24	17	28
Material difficulties (transport, accommodation)	22	15	14	23	19	24

Source: MESR-DGESIP/DGRI-SIES (2008 *baccalauréat* holders panel).

04 Access rate to higher education per generation according to social background (%)

Metropolitan France



Source: Source: MESR-DEPP (post-baccalauréat monitoring of the sample of pupils in Year 7 in 1995).

09

In 2009, general *baccalauréat* holders represented 83% of new *baccalauréat* holders enrolled at university (excluding IUTs). Their share among students enrolling in IUTs has levelled out at two thirds since 2000. STS sections mainly recruit technological *baccalauréat* holders but also attract a growing number of those with a vocational *baccalauréat*.

More than 80% of new *baccalauréat* holders enrolled at university (excluding IUT) hold a general *baccalauréat*. After declining between 1995 and 2000, this share since increased slightly before recovering to approximately 83%. The proportion of general *baccalauréat* holders enrolling in IUTs increased 5 points between 1995 and 2001, before levelling out at 68.3%. (*Table 1*)

In the STS, holders of a technological *baccalauréat* are in the majority among the newly enrolled but their percentage has steadily decreased over the previous few years and continued to do so at the start of the 2009 academic year (-2.3 points compared to 2008), ending at around 55% as against 67% in 2000. This decrease is offset by a strong rise in enrolments to vocational *baccalauréat* courses (+11.5 points).The proportion of those holding vocational *baccalauréats* doubled between 2000 (8.9%) and 2009 (20.4%).

In the "other courses" (engineering schools independent from universities, business, paramedical and social studies schools, etc.), general *baccalauréat* holders remained in the majority (81.6% of enrolments).

At university, the profile of new *baccalauréat* holders varies according to the streams they enter. The majority of enrolees are general *baccalauréat* holders. Scientific *baccalauréat* holders concentrate on production IUTs, sciences, STAPS and constitute almost all medical students. The other general *baccalauréat* holders opt for the Arts. humanities, law, economics, economic and social administration and IUTs. Technological *baccalauréat* holders are particularly prevalent in IUTs: a quarter of new *baccalauréat* holders in IUT services hold an STG *baccalauréat* and almost a third of those in production hold an STI *baccalauréat* (*Graph 02*).

Access to higher education remains closely linked to social background. Therefore, among *baccalauréat* holders enrolled in higher education, young people from the most privileged backgrounds are largely over-represented. Whatever the stream, excepting STS, more than one out of four new students had parents who were executives, teachers or self-employed. The distribution of students according to their social background has remained stable since 2000. There were proportionately twice as many children of management parents as working class children in the main streams of higher education (*Table 03*).

27.9% of those enrolled in university who had just passed their *baccalauréat* were from the most privileged social backgrounds, a fact which is even more obvious in CPGEs and the health-related disciplines where the proportions of children with executive, teacher and self-employed parents constituted 48.8% and 42.1% respectively.
On the contrary, more employee and working class children were enrolled in the short course technological streams: IUT and especially STS: they represented 30.7% of the newly-enrolled in IUTs and 37.2% in STS compared to less than 16% in CPGE.

Since the same student may enrol in several different options, as with the previous indicator, the data shown here refers not to individuals but to enrolments of new baccalauréat holders in higher education (main enrolments in university only). The practice of multiple enrolments, especially widespread in Bachelor's degree courses, between university and CPGE concerns general baccalauréat holders, mostly from science baccalauréats. Since 2007, the validation of credits and integration of CPGE students in Bachelor's degree programmes has been simplified (decree No. 2007-692 of 3rd May 2007 relative to the organisation and operation of Grande Ecole preparatory classes in compliance with the European harmonisation of educational structures). These agreements should facilitate the validation of credits and the integration of CPGE students in Bachelor's degree courses and reduce the numbers of "double enrolments" (CPGE - university)

Source: MESR-DGESIP/DGRI-SIES
Scope: Metropolitan France + DOM

The profile of new *baccalauréat* holders entering the main higher education courses

09

01 Educational background of new *baccalauréat* holders in higher education streams (%) – 2000-2009 evolution

Metropolitan France + DOM

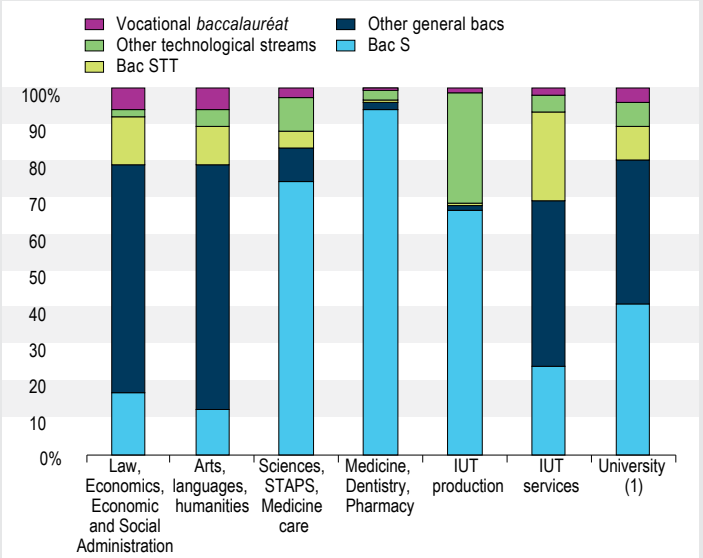
	University (excl. IUT)		IUT		CPGE		STS (1)		Other higher education courses (2)	
	2000	2009	2000	2009	2000	2009	2000	2009	2000	2009
Bac ES	22.5	25.0	20.5	24.2	11.5	14.0	8.5	10.1	20.6	27.5
Bac L	21.9	17.3	2.9	2.3	11.6	9.3	6.2	4.6	14.6	10.6
Bac S	38.3	40.6	44.3	41.8	72.8	72.0	9.4	9.6	44.2	43.5
General bac	**82.7**	**82.9**	**67.7**	**68.3**	**95.9**	**95.3**	**24.1**	**24.3**	**79.4**	**81.6**
Bac STI	1.3	1.2	13.4	12.0	2.1	2.0	22.0	17.1	2.7	3.0
Bac STT	9.8	8.1	15.6	14.6	1.5	2.3	34.7	29.5	7.2	6.7
Autres bacs techno.	3.3	3.3	2.2	3.0	0.5	0.4	10.3	8.7	9.1	7.2
Technological bac	**14.4**	**12.6**	**31.2**	**29.6**	**4.1**	**4.7**	**67.0**	**55.3**	**19.0**	**16.9**
Vocational bac	**2.9**	**4.5**	**1.1**	**2.1**	**0.0**	**0.0**	**8.9**	**20.4**	**1.6**	**1.5**
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(1) Except for STS with work-based learning and except for DCG (diplôme de comptabilité et de gestion — Diploma in accounting and management, formerly DPECF).
(2) "Other courses" designates non-university engineering schools, higher education institutions not linked to the universities (business, management, sales, accountancy, notarial studies, architecture, various specialisations), schools of the arts and culture, private universities, Paramedical schools (2007-2008 data) and social worker training courses (2007-2008 data) recruiting holders of the *baccalauréat*.

Source: MESR-DGESIP/DGRI-SIES.

02 Educational background of new 2009 baccalauréat holders in scientific streams

Metropolitan France + DOM



(1) 82 universities and the Aibi university centre for training and research (CUFR).

Source: MESR-DGESIP/DGRI-SIES.

03 Educational background of new *baccalauréat*-holders in the main higher education streams at the start of the 2007 academic year (%)

Metropolitan France + DOM

	University				of which CGPE (1)	STS (2)	Main higher education streams (3)
	Law, economy, arts, sciences and STAPS	Medicine	IUT	Total			
Farmers, skilled craftsmen, merchandisers, businessmen	10.2	10.8	12.2	10.7	10.7	10.4	10.6
Self-employed, management, teachers	28.4	42.1	27.1	30.2	48.8	13.6	27.8
Intermediate professions	13.7	14.0	16.8	14.3	12.6	13.3	13.9
Employees	15.2	12.5	15.3	14.9	9.1	15.6	14.4
Working-class	13.8	10.0	15.4	13.5	6.4	21.6	14.9
Retired, no profession	11.5	7.5	8.2	10.2	6.1	11.4	10.1
Undetermined	7.2	3.1	5.0	6.2	6.3	14.1	8.3
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(1) For the CPGE and STS under the MEN, i.e. all students in the public sector, all students from private STS and all students from private CPGE.
(2) Except for STS with work-based learning and except for DCG.
(3) Total university, CPGE and STS.

Source: MESR-DGESIP/DGRI-SIES.

10

With 2,316,000 students enrolled for autumn 2009, enrolment in higher education is increasing substantially (+3.7%). Numbers have never been so high.
The increase in training for the medical professions has been particularly marked over the last five years: in medicine and dentistry +22.9%and pharmacy +11%.

After marked increases (nearly 7% per year) from 1990 to 1993, followed by less significant ones (less than 2%) over the two ensuing academic years, higher education numbers fell by 52,000 students between 1995 and 1998 (*Graph 01*). The recovery which began in 1999 continued until 2005 (a yearly average of +1.1%). This growth was sustained in particular by the sharp rise in the number of foreign students (see page 11). In 2006 and 2007, student numbers decreased (by 1.3% and 1%), and those of foreigners were down 1% each year. Student numbers were virtually unchanged in 2008.

At the start of the 2009 academic year, 2,316,000 students were enrolled in higher education in Metropolitan France and the Overseas Departments. With an increase of 3.7%, the largest since 1993, student numbers have never been more robust. The changing size of the generations should have resulted in a decrease of 9,000 young people enrolled in 2009-2010 (*Table 02*). The sharp increase in the number observed at the beginning of 2009 (+82,000) can be explained by the greater attractiveness of higher education (see explanatory note opposite), including foreign students (+4.8% between 2008 and 2009).

General education and health-related courses at university (excluding IUT) account for over half of students in higher education. In the period 1990-2009, changes in enrolment in these courses generally reflected those in higher education as a whole. The situation from course to course is very uneven: it is in the arts, humanities and social sciences, which account for over half the students enrolled in universities in general subjects, that the decline in enrolment was most marked between 2004 and 2009 (- 15.7%) (*Table 03*). Over the same period, enrolment also declined in science and STAPS (- 7.4%) and increased in law (+11.8%). In training courses for the medical professions, the increase in enrolment continued at a fast pace between 2004 and 2009 in (medicine and dentistry +22.9% and pharmacy +11%).

In 2009, the increase in numbers benefited all general education and health-related courses. Almost 6 students out of 10 in these courses are enrolled in a bachelor's degree course. Doctoral courses are most prevalent in the fields of sciences and STAPS (10%)

The proportion of girl students varies according to the type of higher education. While they were in the vast majority in the university arts and humanities streams and in IUFM (7 out of 10), as well as in paramedical or social studies courses (8 out of 10), they were in the minority in more selective courses (CPGE, IUT) and particularly in the scientifically-based streams: they accounted for only a quarter of numbers enrolled in engineering schools (*Graph 04*).

In total, nearly 153 000 short higher education diplomas (BTS and DUT) were awarded in 2008 (*Graph 05*). Their number, which had remained stable for five years, rose 4%, nearly 70% of them taking BTS.
While the number of vocational degree s rose 8.3% in 2008 compared to 2007, other Bachelor's degrees decreased by 4.1%. Meanwhile, the growth of university bac +5 Bachelor's degrees continued (+0.7%): 96,400 Master's were awarded in 2008, 45,600 more than in 1998. In addition, 28,600 engineering Bachelor's degrees were awarded in the 2008 session as against 23,100 in 1998, an increase of 24.1% over ten years.

The published data cover as wide a spectrum of higher education options as possible, except for work-based and apprenticeship programmes other than those available at university (for further information, see Repères et références statistiques, 2010 issue, 6.1 and 6.2).

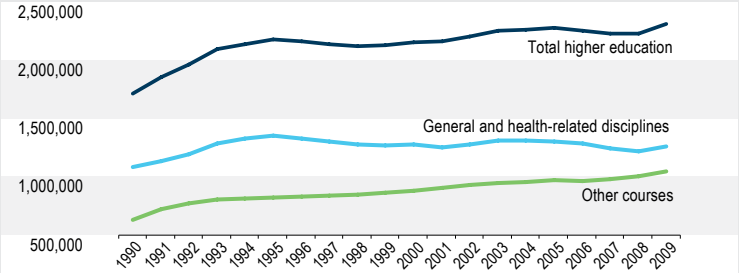
The variation in numbers of students between two academic years may be "naturally" due to the changing student-age population (the "demographic effect") or the fluctuation of the attractiveness of higher education (the "enrolment effect"). To better understand the role of each effect, we use enrolment rates and the age distribution of the population.

***Enrolment rates** are the quotient of the number of young people of a given age enrolled in higher education divided by the estimated total number of the same-age population. By applying the rate observed in September 2008 to the population of 2009, we obtain a number of fictitious students for September 2009. The **"demographic effect"** is the gap between this number and the number of students actually enrolled in 2009. The **"enrolment effect"** is the difference between the numbers of students between the beginning of the 2008 and 2009 academic years and this "demographic effect".*

Sources: MESR-DGESIP/DGRI-SIES et MEN-MESR-DEPP.
Scope: Metropolitan France + DOM.

01 Higher education numbers

Metropolitan France + DOM



Sources: MESR-DGESIP/DGRI-SIES et MEN-MESR-DEPP.

02 Variations in higher education numbers due to demographics and enrolment (in thousands)

Metropolitan France + DOM

	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
Number enrolled (Thousands)	**2,283**	**2,254**	**2,232**	**2,234**	**2,316**
of which					
University (excl. IUT)	1,309	1,285	1,248	1,224	1,268
IUT	113	114	116	118	118
STS	230	228	231	234	240
CPGE	75	76	78	80	81
Trends in the number of enrolments	*13*	*- 29*	*- 22*	*0*	*82*
Demographic effect	*13*	*8*	*4*	*7*	*- 9*
Enrolment effect	*1*	*- 38*	*- 26*	*- 7*	*91*

Interpretation: in September 2009, total higher education student numbers increased by 82,000. Taken in isolation, the change in the size of generations (demographic effect) would have led a reduction of 9,000 students.

Source: MESR-DGESIP/DGRI-SIES et MEN-MESR-DEPP.

03 Breakdown of French university students by course and by group in 2009-2010

Metropolitan France + DOM

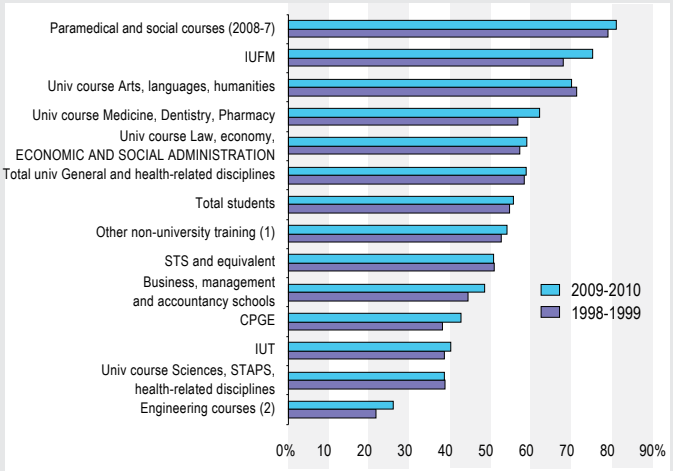
Subject areas	Bachelor's degree course	Master's programme	PhD programmes	All		New entrants (1)	
	Students	Students	Students	Students	% variation 2009-10/ 2004-05	Students	% variation 2009-10/ 2004-05
Law	115,701	69,548	8,238	193,487	11.8	37,032	18.3
Economy, Economic and social administration	114,223	67,727	4,097	186,047	2.9	28,572	1.9
Arts, languages, humanities	270,203	113,803	23,134	407,140	- 15.7	81,034	- 14.8
Sciences, STAPS	164,361	87,873	27,940	280,174	- 7.4	43,090	-14.0
Medicine, dentistry, pharmacy	59,456	109,589	1,183	170,228	22.9	32,135	34.9
Pharmacy	9,563	20,889	398	30,850	11.0	4,468	- 9.7
IUT	118,139			118,139	5.1	50,665	5.6
IUFM		58,518		58,518	(2)		
Total	**851,646**	**527,947**	**64,990**	**1,444,583**	**- 2.2**	**276,996**	**- 1.5**

(1) New entrants in first year of Bachelor's degree course.
(2) In 2004-2005 no IUFM came under the aegis of a university Their affiliation to universities began in 2008-2009.

Source: MESR-DGESIP/DGRI-SIES.

04 Proportion of female students in higher education courses

Metropolitan France + DOM

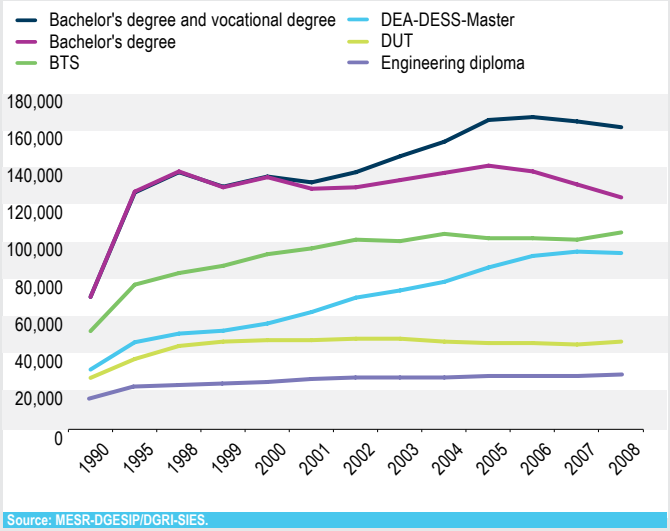


(1) non-homogeneous group: Grands *établissements* (public research & higher education institutions, ENS, UT and INP excluding engineers, integrated preparatory classes, non-university accountancy courses, arts and cultural colleges, architecture, law, journalism and veterinary schools...)
(2) Y compris les formations d'ingénieurs dépendantes des universités, des INP, des universités de technologie et les formations d'ingénieurs en partenariat.

Source: MESR-DGESIP/DGRI-SIES et MEN-MESR-DEPP.

05 Changes in the number of Bachelor's degrees issued in the main higher education institutions

Metropolitan France + DOM



Source: MESR-DGESIP/DGRI-SIES.

11

In French higher education, 278,000 students are of foreign nationality — 12% of the total. Nearly three quarters study at university.
Over the last ten years, these foreign students have substantially increased in number. Foreign students are proportionately more numerous on Master's and Doctorate courses than at Bachelor's degree level.

Between 1999 and 2009, the number of foreign students in French higher education increased from 161,000-278,000, a rise of 73%. This growth accounts for two-thirds of total growth in enrolment in higher education: otherwise, the total number of students would have increased by 2.9% instead of 8.4%. Foreign student numbers increased by 4.8% in 2009 compared to 2008, while the total number of students increased by 3.7%.
In this decade, the proportion of foreign students among the student population increased from 7.5% to 12% (*Graph 01*). This increase affects all training courses above, with the exception of STS and CPGE, where the share of foreigners is still very low (2.6%). In IUT, it remains low (6.3%), despite an increase of 2.4 points. It is in business and engineering schools and universities (general education and health-related training) that the increase is most marked (between 4 and 7 points). In 2009, these courses were above average with a maximum of 16.3% in university.

Almost three quarters (73.3%) of foreign students attend university, as against just over half (51.2%) of French students. In universities, nearly 80% of foreign students do not hold a French *baccalauréat* but an equivalent (*Table 02*). This proportion has been increasing steadily since September 1999, when it was 56.8%.
Africans account for nearly half of foreign students (44% in 2009), although their share has decreased by 6 points in seven years (*Graph 03*). This decrease was primarily due to Moroccans who, while remaining the most sizeable contingent of foreigners, saw their share fall from 16.4% in 2002 to 11.4% in 2009. The proportion of Asians rose and the Chinese are now the second most represented nationality with 10.5% of the student body, as against 5.2% in 2002. The share of other Asians is also growing substantially, especially of Vietnamese, whose numbers have more than doubled in seven years.

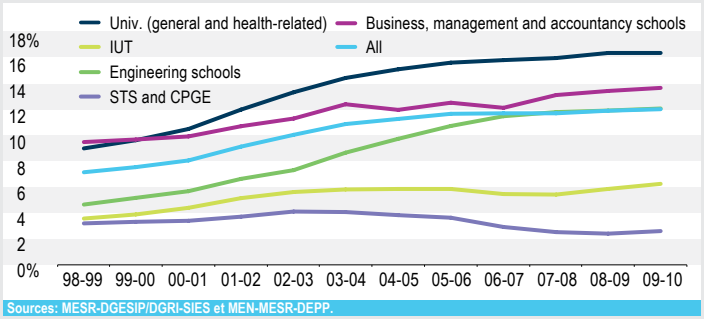
At university, foreign students enrol more in doctoral courses (12.4% as against 3.3% for French citizens) and Master's (44.2% as against 32%). However, there are differences based on geographical origin (*Table 04*). For example, over 15% of Asian or American students are enrolled in doctoral courses, against less than 10% for African students (excluding North Africa).
The choice of courses varies between French citizens and students of foreign nationality, and among the latter, between individual nationalities (*Graph 05*). Like all college students, nearly a third of students choose to study humanities. It is in economics, economic and social administration and ITU that the differences are the most marked: in 2009, 21.5% of foreign students opt for economics and economic and social administration, as against 12% of French students. Students from North Africa opt as frequently for health-related courses as French students (respectively 15.1% and 15.4%), while other foreigners seldom opt for these. They also favour sciences: over a third of North African students are enrolled in science as as against a quarter for all students. Finally, over half of American students enrol in humanities and social sciences as against less than a third of foreigners overall.

*We may distinguish the population of **foreigners** who came to France specifically to follow their studies by considering only those foreign students who do not hold a baccalauréat and enrolled using an equivalent Bachelor's degree. This is an approximation since it is possible to sit the baccalaureate abroad. Nevertheless, we can only isolate these students in the restricted field of universities and not across the whole of higher education.*
From 2008-2009, IUFMs were integrated into their universities of affiliation, except those of Guadeloupe, French Guyana and Martinique. In addition, 17 engineering schools left the field of universities in 2008-2009.
Foreign student enrolment in IUFMs is not included in the tables for universities. There are 785 foreign students at IUFMs. 74% of them are citizens of the European Union. Indeed, only students from the European Union are authorised to take the competitive exams for public institutions.

Source: MESR-DGESIP/DGRI-SIES.
Scope: Metropolitan France + DOM.

01 Changes in the number of Bachelor's degrees issued in the main higher education institutions

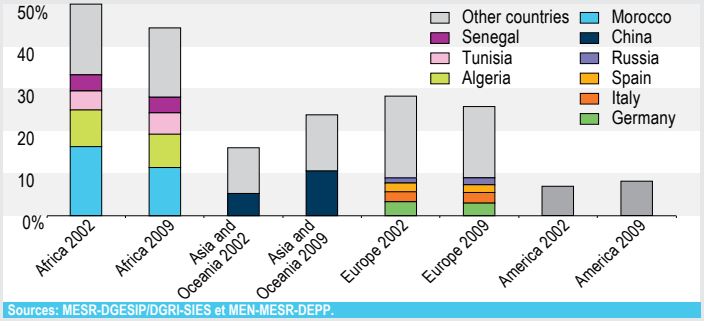
Metropolitan France + DOM



Sources: MESR-DGESIP/DGRI-SIES et MEN-MESR-DEPP.

03 Breakdown of foreign students by continent of origin

Metropolitan France + DOM



Sources: MESR-DGESIP/DGRI-SIES et MEN-MESR-DEPP.

02 Changes in the number of foreign students at universities

Metropolitan France + DOM

	1985-1986	1990-1991	1995-1996	2000-2001	2005-2006	2006-2007	2007-2008	2008-2009 (1)	2009-2010 (1)
Students	**128,141**	**131,901**	**126,366**	**137,505**	**209,523**	**208,007**	**204,290**	**206,475**	**214,252**
Including non-baccalauréat holders	*79,487*	*84,990*	*74,746*	*83,987*	*158,689*	*160,701*	*159,368*	*162,687*	*169,896*
Annual variation (%)						- 0.7%	- 1.8%	1.5% (2)	3.8%
Proportion of foreign students (%)	13.5%	11.4%	8.7%	9.8%	14.7%	14.9%	15.0%	15.4%	15.5%

(1) These numbers do not include the students enrolled in IUFM training.
(2) The change in 2008-2009 compared to 2007-2008 is calculated at constant coverage, i.e. without the IUFM students and those engineering students who left university in 2008-2009.

Source: MESR-DGESIP/DGRI-SIES.

04 Breakdown of students in university courses according to continent in 2009

Metropolitan France + DOM

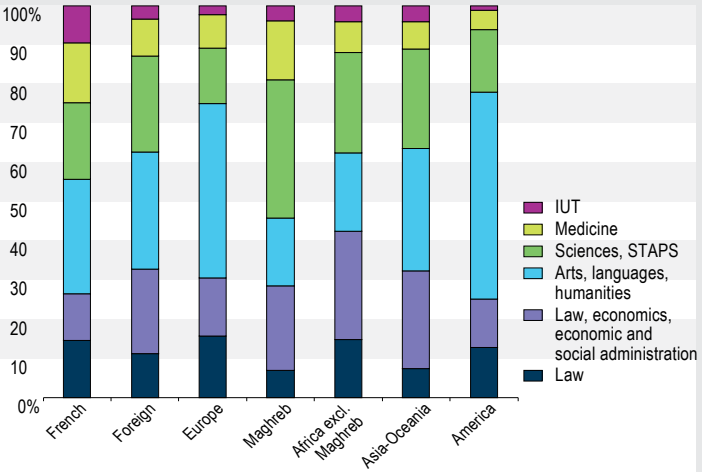
Continent/ course LMD	Bachelor's degree	Master's	PhD	Total
French	64.8	32.0	3.3	1,171,813
FOREIGN	43.4	44.2	12.4	214,252 (1)
Europe	47.4	40.8	11.8	48,003
Maghreb	37.7	51.1	11.2	52,941
Africa excl. Maghreb	47.5	43.3	9.2	48,003
Asia-Oceania	42.7	40.7	16.6	48,122
America	39.5	44.8	15.7	17,038

(1) 145 students had no nationality, were stateless or who provided no information.

Source: MESR-DGESIP/DGRI-SIES.

05 Choice of university courses in 2009 by nationality

Metropolitan France + DOM



Source: MESR-DGESIP/DGRI-SIES.

12

The fact of whether students live with their parents or not is an important factor when studying their lives. While two thirds of them no longer live with their parents, the situations vary and only 26% are totally independent from both a residential and financial point of view.

In 2010, 35% of students lived with their parents, 33% lived alone or in couples, while 12% were in hostels and 10% in shared flats (*Graph 01*).
Housing conditions vary greatly depending on the "type" of students. Students become more independent with age: half the under-21s live at home with their parents as against only 16% of those aged 22+. The area in which the students live is also very important (*Graph 02*). The majority of students in urban areas of fewer than 50,000 inhabitants, in Paris and the countryside live at home: at Bachelor's degree level, this applies to 48% of students in urban areas of fewer than 50 000, 61% of inhabitants in the urban area of Paris and 63% of those in communes outside urban areas. This situation applies to fewer students in towns within large provincial urban zones (between 31% and 35%).
The distance between the parental home and place of study in the provinces, the attractiveness of education provision in major cities as well as difficulties in housing and transport supply in the Paris region probably explain these differences.

However, leaving the parental home does not necessarily mean breaking ties with them. As proof, 34% return home to sleep at least two to three weekends per month (45% for those in hostels) and 41% wash their clothes at the home of their parents or spouse (53% in hostels).

Comparing similar modes of accommodation, the various forms of independence reveal contrasting realities from an economic point of view. To summarise this diversity, students can be divided according to three major characteristics: living with parents or not, having significant paid work or not (at least part-time and at least six months per year) or filling in their own tax return or not.

We thus arrive at four groups:

1. "Assisted cohabitant": living at home with their parents and financially dependent on their family (28%)
2. "Assisted non-cohabitant": having their own accommodation but financially dependent on their parents (39%)
3. "Economically independent cohabitant": living in their parents' home but financially independent (7%)
4. "Emancipated": living in their own accommodation and filling out their own tax returns (26%)

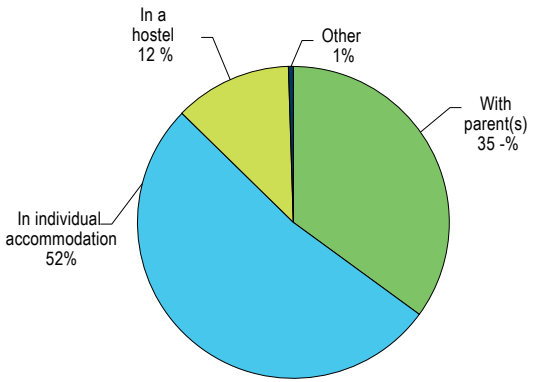
While students do not consider themselves particularly privileged (more than half report having been constrained for financial reasons since the beginning of the academic year), they nevertheless do not see themselves as an impoverished group (only 11% say they are very dissatisfied with their resources). According to the indicators of economic comfort and hardship (*Tables 03 and 04*), differences emerge between categories: the most sensitive indicators of insolvency (requests for emergency assistance, financial restriction) reveal the intermediate position of the "assisted non-cohabitants" and "the economically independent cohabitants": the two indicators most closely associated with paid work contrast those who are economically independent with those still dependent on guardians, regardless of residential independence, and finally the budget share allocated to going out is greater among cohabitants than for those living outside the home.

The 6th edition of the Conditions of Student Life survey of the National Observatory of Student Life (OVE) was conducted in spring 2010. Over 130 000 students were invited by mail to answer a questionnaire on the Internet. Over 33 000 students participated, representing a response rate of around 25%.
To ensure better representation, the raw data are weighted with reference to data centralised by the statistical services of ministries on the actual enrolment in institutions.
The first results presented here relate to students in universities (excluding engineering courses), and upper classes of lycée (CPGE and STS), a sample of 26,700 people.

Source: OVE, Conditions of Student Life survey, 2010.
Coverage: students enrolled for the 2009-2010 academic year at university (Metropolitan France + DOM-COM) and in post-*baccalauréat* classes (CPGE and STS, MEN-MESR public institutions, Metropolitan France).

01 Accommodation during a normal study week (%)

Metropolitan France + DOM + COM

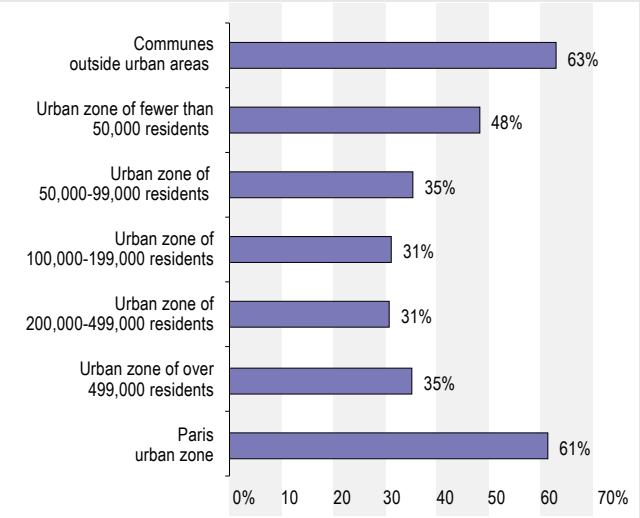


Interpretation: in 2010, 12% of students live in hostels (mostly in university halls but also at home or in private residences).

Source: OVE, survey Conditions of Student Life, 2010.

02 Students cohabiting with their parents by size of local area (Bachelor's degree students %)

Metropolitan France



Interpretation: 31% of Bachelor's degree students living in an urban zone of 200,000 to 499,999 inhabitants live with their parent(s).

Source: OVE, survey Conditions of Student Life, 2010.

03 Indicators of difficulties (%)

Metropolitan France + DOM + COM

Degree of autonomy	Family assistance	Requests for emergency aid *	Restraint	Drawing on savings	Totally dependent on income from work	Difficulty in reconciling work with study
Assisted cohabitant	17.1	1.7	43.7	42.0	6.1	7.3
Assisted non-cohabitant	26.0	3.5	54.0	48.9	14.9	9.3
Economically independent cohabitant	21.4	5.0	50.9	46.4	28.3	18.4
Emancipated non-cohabitant	25.2	6.5	57.1	51.4	42.7	19.6
All	**23.0**	**3.9**	**51.7**	**47.4**	**20.7**	**12.1**

* Social aid from the National Fund for Emergency Aid, excluding grants and accommodation assistance: disbursed annually to students facing persistent or occasional difficulties, in aid of students undergoing temporary but serious difficulty.
Interpretation: 42.7% of emancipated non-cohabitant students say the money they earn from their working activities is indispensable to their survival.

Source: OVE, survey Conditions of Student Life, 2010.

04 Comfort Indicators (%)

Metropolitan France + DOM + COM

Degree of autonomy	Share of student's own budget spent on going out	Satisfaction with resources *	Satisfaction with accommodation*
Assisted cohabitant	32.7	46.7	79.7
Assisted non-cohabitant	16.7	43.1	62.1
Economically independent cohabitant	28.5	42.5	70.7
Emancipated non-cohabitant	12.0	30.3	56.3
All	**17.5**	**40.7**	**66.1**

* % of satisfied and very satisfied on a scale from 1 to 5.
Interpretation: assisted cohabitant students spend 32.7% of their own budget on going out; 46.7% are satisfied with their resources and 79.7% with their accommodation.

Source: OVE, survey Conditions of Student Life, 2010.

13

16% of students enrolled in French universities and senior *lycée* classes have undertaken a trip abroad in connection with their studies since entering higher education. One third of them claim to have benefited from an international programme. The main obstacles to mobility are financial.

In 2010, 16% of French citizens said they had undertaken at least one trip abroad in connection with their studies since initially enrolling in higher education. When asked about the reasons for these visits abroad, 39% of students reported having gone for study purposes, 33% for occupational reasons (including internships) and 47% for other reasons (language courses, summer school, study trip...).

The proportion of students experiencing a period of international mobility is inextricably linked to their stage of progress within their course: 12% of undergraduate students (excluding new enrolees), 27% of Master's and 39% of PhD students. At equivalent stages of these courses, there are significant variations by discipline. Thus, at Master's level, university students enrolled in humanities and languages courses undertake trips abroad more frequently than others (*Graph 01*). The motives for such trips also vary according to the subjects studied: while students enrolled in arts, languages or in law and economics courses frequently cite the pursuit of study, those enrolled in science or health-related courses more often travel for professional purposes (*Table 02*).

All courses combined, such international mobility also depends on the students' social background, measured here by the awarding of grants on social criteria: 14% of students receiving grants have experienced a period of international mobility during their course against 17% of non-grant students.

Nearly 35% of students to have undertaken a study trip abroad indicate that this visit took place as part of an international exchange programme (Erasmus or other). This most often applies to arts and languages (44%) and to law and economics (42%) courses. This type of journey is less common (28%) in science and health-related subjects.

Students most often travel to the United Kingdom (*Table 03*). The other two most commonly cited European countries are Spain and Germany. In total, over two thirds of trips are made to a European country. Outside Europe, America — particularly the United States — is the favourite destination for students.

The average length of stay abroad is 5 months, but this varies significantly depending on the trip: 9 months for study purposes, five months for professional activities and 3 months for trips for other reasons.

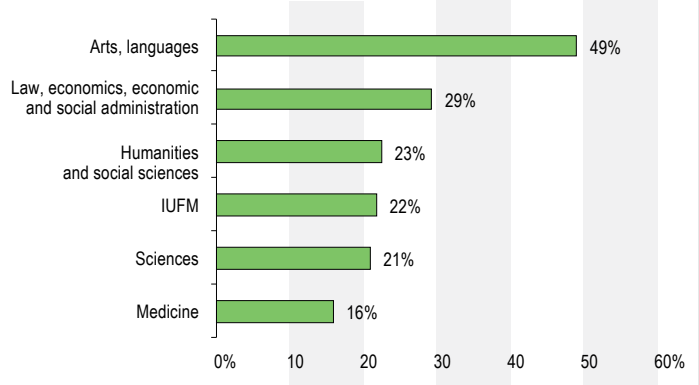
Of students who have not travelled abroad since entering higher education, 43% say they plan to go in future and 41% say they have no such intention. The main obstacle to mobility cited by these students is the financial aspect of travel (*Graph 04*). This is more often cited by students belonging to disadvantaged social groups. 59% of grant holders therefore mention it as against 40% of non-grant holders. Students also cite obstacles related to the inadequacy of their training and lack of information.

The 6th edition of the survey on Conditions of Student Life for the National Observatory of Student Life (OVE) was conducted in spring 2010. Over 130,000 students were invited by mail to answer a questionnaire on the Internet. Over 33,000 students participated, representing a response rate of around 25%.
To ensure better representation, the raw data are weighted with reference to data centralised by the statistical services of ministries on actual enrolment in institutions.
The first results presented here relate to students in universities (excluding engineering courses), and post-baccalauréat courses (CPGE and STS), a sample of 26,700 people:

Source: OVE, survey Conditions of Student Life, 2010.
Coverage: students of French nationality enrolled for the 2009-2010 academic year at university, excl. engineering courses (Metropolitan France + DOM-COM) and in post-*baccalauréat* courses (CPGE and STS, MEN-MESR Metropolitan France). (Sample of 24,727 people).

01 Trips abroad connected with studies since entering higher education by discipline (% of Master's students)

Metropolitan France + DOM + COM



Interpretation: 21% of science students enrolled at Master's level have taken at least one trip abroad in connection with their studies since first entering higher education.

Source: OVE, survey *Conditions of Student Life*, 2010.

02 Motives for trips abroad connected with studies since entering higher education according to discipline (% of Master's students)

Metropolitan France + DOM + COM

	Pursuit of studies	Professional activity (including internships)	Others (language courses, summer schools, study trips
Arts, Languages	58.2	35.7	36.2
Humanities and social sciences	48.7	30.7	43.7
Law, economics, economic and social administration	61.7	34.9	34.1
Sciences	41.5	48.7	27.3
Medicine	40.7	51.9	20.3
IUFM	50.2	30.1	39.8
All	**53.7**	**36.8**	**34.9**

Interpretation: 48.7% of science students enrolled at Master's level who have taken at least one trip abroad in connection with their studies since first entering higher education did so in the context of a professional activity..

Source: OVE, survey *Conditions of Student Life*, 2010.

03 Destination countries for study-related overseas trips (%)

Metropolitan France + DOM + COM

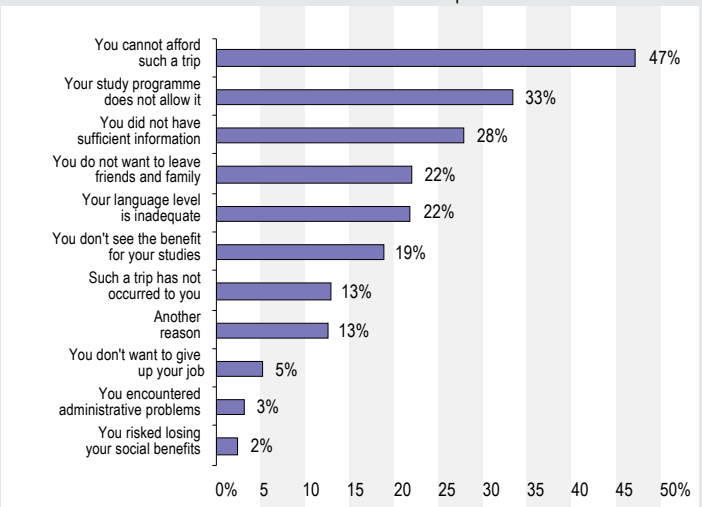
Destination country	Proportion of students for whom this was their longest trip
United Kingdom	24.6
Spain	12.1
Germany	10.7
Italy	5.0
Ireland	4.5
Other European countries	14.0
Total Europe	**70.9**
USA	7.6
Other American countries	10.2
Total America	**17.8**
Other continent	**11.3**
Total	**100.0**

Interpretation: 24.6% of science students enrolled at Master's level who took en at least one trip abroad in connection with their studies since first entering higher education went to the United Kingdom.

Source: OVE, survey *Conditions of Student Life*, 2010.

04 Obstacles to mobility listed by students who have not taken a trip abroad since entering higher education (%)

Metropolitan France + DOM + COM



Interpretation: 47% of students who have not made a trip abroad in connection with their studies since first enrolling in higher education declare that they did not do so because they could not afford it. .

Source: OVE, survey *Conditions of Student Life*, 2010.

14

The success rate of students enrolled in short vocational courses is significant. Holders of a BTS and especially a DUT increasingly go on to study at least until Bachelor's degree level, especially thanks to the existence of vocational degrees.The vast majority of graduates who opted for scientific or commercial preparatory class joined a *grande école* two or three years later.

Two thirds of graduates who enrol in the STS after their *baccalauréat* obtain their diploma two or three years later (*Table 01*). The others remain enrolled in the STS or change course. However, more than one in four drops out of school without obtaining a higher education diploma These students' progress varies greatly according to their educational background: 86% of general *baccalauréat* holders and 69% of technological *baccalauréat* holders pass their technological BTS in two or three years. Half the vocational *baccalauréat* holders finish without a degree, those who take the work-based path after their *baccalauréat* achieve equivalent results, while technology *baccalauréat* holders are slightly less successful when they receive their training in a work-based context.

The DUT achievement rate (*Table 02*) takes into account all students enrolled for the first time in an IUT in 2005: two-thirds obtain their diploma within two years and 76% after three years. *General-baccalauréat* holders succeeding in two years are significantly more numerous than those holding a technological or vocational *baccalauréat*. Those spending two years in the service sector rather than in production have a better chance of success, while over three years, they are more balanced.

Continuation of studies after a DUT or a BTS has increased significantly, particularly through the creation of vocational degrees (*Table 03*). 81% of DUT-holders and 45% of holders of a BTS obtained two or three years after the *baccalauréat*, whatever their initial orientation, continue their education after graduation: the increase is 17 and 11 points respectively over the previous panel of *baccalauréat* holders six years earlier. More than half of DUT holders and a quarter of BTS holders enrol for a general or vocational degree the following year.

The progress of *baccalauréat* holders admitted to preparatory classes for scientific or commercial *grandes écoles* (CPGE) of whom eight in ten obtained their *baccalauréat* with honours, is generally successful. Three years after their *baccalauréat*, nearly 80% of these students have joined a *grande école*, after two or sometimes three years in CPGE (*Graph 04*). Most often, the others have successfully changed course and joined university. The context of students on arts courses is different insofar as the schools for which these classes prepare offer very few openings each year: nearly one in two students abandon this option after a year. But in the fourth year after their *baccalauréat*, almost two-thirds have enrolled in a Master's or IUFM, or have joined a *grande école*, or more often an IEP (*Institut d'études politiques*: Institute of Political Studies).

Two different sources were used:
- Graphs 01, 03 and 04 result from monitoring panels of students (see page 08), allowing an assessment to be made of the students' progress. Graph 01 thus measures the success and progress three years later of new baccalauréat holders enrolled in STS after their baccalauréat.
- The study of success at DUT (Graph 02) in two years and three years is based on a longitudinal approach, success rates in DUT are derived from data from SMIS files for enrolled students and results. The generation of students entering IUT for the first time in the academic year 2004 was followed for three consecutive years.
The method used takes into account shifts in the generation of students, whether in terms of change of course or change of institution.

Source: MESR-DGESIP/DGRI-SIES.
Scope: Metropolitan France + DOM, Metropolitan France for the samples.

01 Progress of *baccalauréat* holders enrolled in STS after their *baccalauréat* (%)

Metropolitan France

	General *baccalauréat* holders	Technological *baccalauréat* holders	Vocational *baccalauréat* holders	All
obtained their BTS	**86**	**69**	**48**	**67**
in 2 years	77	57	40	57
in 3 years	9	12	8	10
did not obtain their BTS	**14**	**31**	**52**	**33**
are still in STS	-	3	2	2
opted for a new course	4	4	2	4
left without a higher education qualification	10	24	48	27

Source: MESR-DGESIP/DGRI-SIES (monitored after the *baccalauréat* of a panel of students who entered Year 7 in 1996 and reached *baccalauréat* age between 2002 and 2005).

02 Rate of DUT success in two or three years for *baccalauréat* -holders enrolled at an IUT in 2005 (%)

Metropolitan France + DOM

	IUT production sector		IUT services sector		All	
Baccalauréat stream	2 years	Total over 3 years	2 years	Total over 3 years	Qualified in 2 years	Total over 3 years
Bac L	ns	ns	69.9	74.4	69.6	74.1
Bac ES	ns	ns	75.4	82.2	75.4	82.2
Bac S	70.8	81.5	72.7	82.3	71.5	81.8
General *baccalauréat*	**70.8**	**81.4**	**73.9**	**81.6**	**72.7**	**81.5**
Bac STI	49.3	65.3	45.7	62.7	48.6	64.8
Bac STG	ns	ns	59.1	69.0	59.1	68.9
Other techno bacs	54.9	67.9	65.6	70.6	57.0	68.5
Technological *baccalauréat*	**50.3**	**65.7**	**57.4**	**68.1**	**54.4**	**67.1**
Vocational *baccalauréat*	**33.0**	**45.3**	**41.5**	**47.6**	**39.0**	**46.9**
All	**63.8**	**75.9**	**68.2**	**76.7**	**66.4**	**76.4**

NB: the proportion of graduates corresponding to populations with low enrolment figures is not significant (ns) and therefore not given.

Source: MESR-DGESIP/DGRI-SIES (enquête SISE).

03 Education continued after DUT or BTS obtained 2 or 3 years after the bac (%)

Metropolitan France

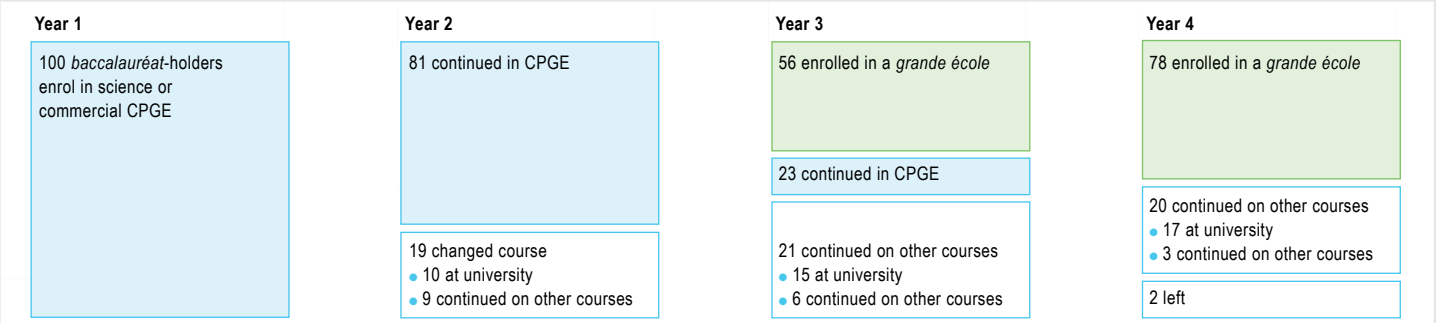
	Total students obtaining DUT in 2nd or 3rd year		Total students obtaining BTS in 2nd or 3rd year	
	1989 panel*	1995 panel*	1989 panel*	1995 panel*
Continued at university	**31**	**54**	**10**	**25**
of which: vocational degree	*1*	*23*	*-*	*15*
Continued in other training	**33**	**27**	**24**	**20**
of which grandes écoles	*11*	*14*	*3*	*3*
Total education continued	**64**	**81**	**34**	**45**
of which work-based	***12***	***12***	***7***	***12***

* Ttudents entering Year 7 in 1989, mostly reaching *baccalauréat* age in 1996 (between 1997 and 1999 for the others) (1989 panel).
** Students entering Year 7 in 1995, mostly reaching *baccalauréat* age in 2002 (between 2003 and 2005 for the others) (1995 panel).

Source: MESR-DGESIP/DGRI-SIES (Source: MESR-DEPP (post-*baccalauréat* monitoring of the sample of pupils in Year 7 in 1995).

04 History of *baccalauréat* holders enrolled in scientific or commercial preparatory classes after their *baccalauréat* (%)

Metropolitan France



Source: MESR-DGESIP/DGRI-SIES (monitored after the *baccalauréat* of a panel of students who entered Year 7 in 1996 and reached *baccalauréat* age between 2002 and 2005).

15

The progress of new Bachelor's degree students varies significantly according to their educational backgrounds. General *baccalauréat* holders who complete "on time" do better than general *baccalauréat* holders who are "behind schedule" and technological *baccalauréat* holders especially. Nearly three quarters of Bachelor's degree graduates holders go on to a Master's or an IUFM the following year.

An analysis of the progress of the panel of *baccalauréat* holders enrolled in the 1st year of their post-baccalaureate Bachelor's degree shows that 33% of them leave the course after the first or second year (*Graph 01*). Most frequently they opted for another pathway, an IUT, STS, or a specialist school, which in some cases provides the training they initially wanted. In the fourth year after their *baccalauréat*, 61% of those enrolled in L1 are still at university, on Master's or Bachelor's degree courses. Only 14% have left with no qualification other than their *baccalauréat*.

In total, 38% of those enrolled in Bachelor's degree courses and actually present on 31 October after their *baccalauréat* obtain their Bachelor's degree in in three years, while 15% of students do so in four years (*Graph 02*). Results vary considerably depending on these new students' previous history: 68% of students holding a general *baccalauréat* "on schedule" obtain their Bachelor's degree in three or four years, which is the case for only 45% of those "behind schedule" and only 20% of those holding a technological *baccalauréat*.

The success rate of students enrolled in vocational degree courses is high: 87% of them graduate in a year (*Table 03*). The most successful are DUT holders (over 90% in one year). Those who were not in education the previous year and have resumed studies show the lowest success rate, although it remains high (82%). Finally, after two years, success in vocational degree was 89%.

Three quarters of holders of a general Bachelor's degree continue their studies at university next year. The majority (63%) enrol in a Master's (T*able 04*).Their proportion varies greatly according to the discipline in which the Bachelor's degree was obtained: it is very strong in law (86%) in life, medical, earth and universe sciences (73%) and fundamental science (70%). However, fewer students continue on to a Master's in the arts (49%) and especially in STAPS (37%). However, it is in those disciplines that students are more likely to opt for an IUFM. In total, nearly one general Bachelor's degree holder in ten joins an IUFM the next year.

Among those enrolled in Master's or first year Master's course (M1) in 2005-2006, 50% continued the following year to M2 and 16% repeated their M1 year (*Graph 05*). Others left the Master's course, whether or not they had validated their first year. Some opted for another university course (5%) or prepared for the competitive IUFM admissions exam (4%) but most often they left university (25%) whether or not they continued studying via other channels. In total, 42% of students initially enrolled in Master's obtained their Master's in two years, the theoretical duration of this qualification, and 49% graduated after three years: a four-point increase over those enrolled in a Master's or M1 in 2004-2005.

Two different sources were used to gauge success at university:

- Monitoring student panels (Graphs 01 and 02): these outline the history of students enrolled for a Bachelor's degree in the September following their baccalauréat and who were still attending courses on 31st October. They refer to the panel of students entering Year 7 in 1995 and reaching baccalauréat age between 2002 and 2005 (see also explanatory note in File 08).

- SMIS files (Student Monitoring Information System) (Tables 03 and 04, Graph 05): these measure the administrative enrolment of students, who in some cases may never have attended their courses or have abandoned them very quickly.

Success in vocational degree courses is a longitudinal indicator. It is calculated based on the generation of entrants to these courses for the first time in 2006-2007. These entrants are monitored for two consecutive years. The courses followed the previous year are found in the SMIS files of enrolees in 2005-2006 and the Education Information System. The proportion of students enrolled in first-year Master's who graduate in two or three years is worked out based on a generation enrolled in M1 and followed for three consecutive years. The results of the generation of students who graduate in two years are taken into account, as well as those of repeaters. In 2005-2006, the first year of Master's comprised both students having completed a Master's before the LMD scheme was adopted and actual M1 students.

Sources: MESR-DGESIP/DGRI-SIES et MEN-MESR-DEPP.
Scope: All of France (Metropolitan France + DOM + COM + New Caledonia), Metropolitan France for the sample.

01 Progress of *baccalauréat* holders after their *baccalauréat* (%)

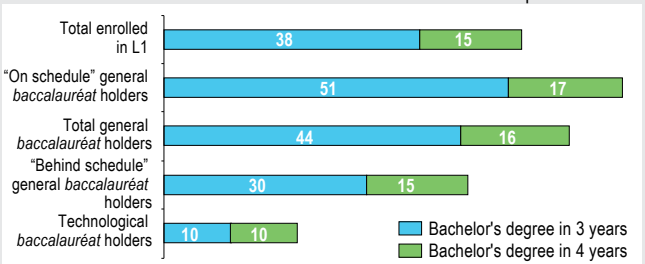
Metropolitan France

Year 1	Year 2	Year 3	Year 4
100 *baccalauréat* holders enrolled in Bachelor's degree courses and present on 31st October	77 enrolled in Bachelor's degree • *53 in L2* • *24 in L1*	67 enrolled in Bachelor's degree • *24 in L1* • *24 in L1 or L2*	33 enrolled in Master's or (IUFM)
	17 enrolled elsewhere • *9 in IUT/STS* • *8 continued on other courses*	22 enrolled elsewhere • *11 in IUT/STS* • *11 continued on other courses*	28 enrolled in Bachelor's degree • *21 in L3 (or vocational degree)* • *7 in L1 or L2*
	6 left	11 left	19 enrolled elsewhere
			20 left of whom 6 obtained a diploma

Source: MESR-DGESIP/DGRI-SIES (monitored after the *baccalauréat* of a panel of students who entered Year 7 in 1996 and reached *baccalauréat* age between 2002 and 2005).

02 Rate of obtaining the Bachelor's degree in 3 or 4 years for 95 *baccalauréat* holders enrolled in L1 on the 31st October according to their type of *baccalauréat* (%)

Metropolitan France



Source: MESR-DGESIP/DGRI-SIES (monitored after the baccalauréat of a panel of students who entered Year 7 in 1996 and reached baccalauréat age between 2002 and 2005).

03 Success of students enrolled in vocational degree in 2006-2007 according to learning followed the following year (%)

All of France

Situation in preceding year	Success in 1 year	Success in 2 years
IUT	92.8	94.0
Bachelor's degree-DEUG	88.0	90.2
STS	88.3	89.5
Other higher education courses	81.0	83.9
Non-schooled	81.6	85.1
All	**87.0**	**89.1**

Sources: MESR-DGESIP/DGRI-SIES (SMIS survey) and MESR-MEN-DEPP (education information system).

04 Future of general Bachelor's degree graduates in 2008 according to the discipline in which the Bachelor's degree was obtained (%)

All of France

	Proportion of Bachelor's degree holders continuing to Master's in 2008-2009	Proportion of Bachelor's degree holders continuing to IUFM in 2008-2009
Law	86.3	0.3
Economics	67.9	1.0
Economic and social administration	62.9	4.3
Arts	48.6	17.1
Languages	50.4	11.5
Human sciences	57.0	11.4
Life, medical, earth and planetary sciences	72.8	7.4
Basic sciences and applications	70.3	11.6
STAPS	36.8	25.2
Total	**63.3**	**9.1**

Source: MESR-DGESIP/DGRI-SIES (SISE survey).

05 Future of those enrolled in M1 (%)

All of France

Year 1	Year 2	42 obtain the Master's in 2 years	Year 3	7 additional students obtained the Master's in 3 years
100 students enrolled in the 1st year of Master's	50 enrolled in M2		4 re-enrolled in M2	
			3 did not re-enrol in university	
			1 changed course	
	16 repeated M1		5 enrolled in M2	
			5 were in another situation (triple repeat ofM1 or re-entered university)	
			6 did not re-enrol in university	
	5 changed university courses		1 enrolled in M2	
	4 enrolled in IUFM			
	25 did not re-enrol in university		1 enrolled in M2	

Source: MESR-DGESIP/DGRI-SIES (SMIS survey).

16

In 2008, continued higher education accounted for 460,000 students, issued 65,000 diplomas and 38,000 national diplomas and achieved a turnover of €350 million. Once again numbering 4,000 in 2009, qualifications accrediting prior and experiential learning remain popular.

In 2008, training in higher education increased its turnover by 8% and the number of students by 3%, compared to 2007 (*Table 01*), it nevertheless occupied a modest place in terms of overall education delivered in France (5% of total turnover). Private funds, companies or individuals represent 63% of institutional resources for education of all types; their share is as high as 68% in universities, while public funds remain at 30% (*Table 02*). Courses offered by universities grew in terms of both revenue and number of trainees, while the CNAM witnessed a 12% drop in enrolments in 2008, but for much longer courses than in 2007 (180 hours against 146).

IUTs comprise only 6% of the number of students in Continuing University Education (22,500) but represent 14% of turnover and 20% of student hours due to an average course length exceeding that of other educational institutions. In addition, half of vocational contracts are signed with IUTs.

In 2008, of 369,000 students in universities, the share of employees enrolled as trainees in various capacities (training plan, vocational contracts or individual training leave) reached 33% (*Graph 03*), their numbers increasing from 116,000 to 119,000. Trainees enrolling on their own initiative (individuals) increased from 166,000 in 2007 to 183,000 in 2008 and remained the majority (50%). The number of individual members of university of all ages represented only 45% of paying individuals, slightly less than 2007. At the same time, the share of job seekers remained stable at 9% of trainees with a total of 33,000 trainees as against a volume of 8 million trainee hours (19%) while the number of unemployed students receiving reimbursement decreased by 2% and that of job seekers without any aid rose 18% in one year. In total in 2008, 216,000 paying individuals and "others" (liberal and craft professions) represented 59% of trainees and 41% of trainee hours (19 million).

In 2008, qualification-bearing short courses, lasting an average of 31 hours, attracted ever more students to university — 31% of those enrolling. A quarter of those enrolled are preparing a diploma or a national title and 19% a college degree. Attendance at culture-related lectures remains stable with 25% of enrolees.

The number of diplomas issued in the context of university continuing education continued to rise in 2008 Of 59,000 diplomas awarded, over half were national diplomas (33,000), 41% were level II (Bachelor's degrees and Master's), over a third were level I (Master's), 15% Level IV, mostly the DAEU (*diplôme d'accès aux études universitaires*: university entrance qualification) and 11% at Level III, essentially DUT prepared in IUT (*Table 04*). In 2008, the proportion of diplomas awarded by universities in continuing education out of the total number of diplomas stood at 9% after 8.3% in 2007.

The validation of acquired skills is another way of obtaining a qualification through official recognition of work experience. Since 2002, this scheme has developed in higher education (universities and CNAM: National Centre of Industrial Art and Design) in addition to VAP (Accreditation of Prior Learning., 1985 decree) enabling access to education programmed through exemption from the usual admission criteria. In 2008, roughly 4,055 qualifications were partially or totally validated, with 2,140 complete diplomas being awarded.

Trainee: *the notion of trainee corresponds to a single enrolment and not a natural person. A person may be enrolled in several training courses and count for as many trainees*

Trainee hours: *Trainee-hours: a unit of measurement whereby the number of trainees is multiplied by the length of programmes.*

Source: MEN-MESR-DEPP.
Scope: The whole of France for table 01, France + DOM for other charts and graphs. All higher education institutions under the Ministry of National Education, Higher Education and Research whose mission is to deliver higher education are concerned. Universities and their components, the 3 INP: both interuniversity training centres (CUEFA in Grenoble and UCES in Nancy) and the four universities of technology constitute the category "Universities". INALCO (*Institut national des langues et civilisations orientales*: National institute of Oriental languages and civilisations) and IEP PARIS, the seven IEPs and one IAE as well as 16 affiliated engineering schools, Écoles normales supérieures and a few *Grands établissements*, schools and institutes outside universities, also come under the survey, in the category "Other EPSCP (*Etablissement public à caractère scientifique, culturel et professionnel* – public institutions for scientific, cultural and vocational education and EPA (*Établissement public à caractère administratif* – public higher education institution)". The third category consists of CNAM and regional affiliates within the ARCNAM (CNAM Regional Association).

01 General data on continuing education in higher education (2006-2008)

All of France

	2006			2007			2008		
	Turnover in millions of €	Trainees	Trainee-hours in millions	Turnover in millions of €	Trainees	Trainee-hours in millions	Turnover in millions of €	Trainees	Trainee-hours in millions
Universities, UT, INP and components	206	337,060	42	203	347,212	42	218	369,498	44
Grands établ. and public eng. schools under MESR authority	18	11,898	2	21	12,861	2	23	13,897	2
TOTAL	**225**	**348,958**	**43**	**224**	**360,073**	**44**	**241**	**383,395**	**46**
CNAM and associated regional centres (ARCNAM)	93	85,906	14	99	93,884	14	108	82,723	15
All	**318**	**434,864**	**57**	**323**	**453,957**	**57**	**349**	**466,118**	**61**

Source: MEN-MESR-DEPP.

02 Proportion of higher education graduates in the population (2008) (en %)

Metropolitan France + DOM

Origin of receipts according to type of institution %	Universitiess, INP and UT		Others EPSCP and EPA		CNAM		Total with CNAM	
	2007	2008	2007	2008	2007	2008	2007	2008
Business	26	29	29	37	23	28	25	29
OPCA	14	16	7	8	4	4	10	12
Company and OPCA sub-total	**40**	**45**	**37**	**45**	**27**	**31**	**36**	**41**
Individuals and trainees	26	23	13	13	25	21	25	22
Private funds sub-total	**66**	**68**	**50**	**58**	**52**	**52**	**61**	**63**
Public authorities, for the training of their agents	6	6	13	9	1	0	5	4
Public authorities, for the training of specific audiences	20	17	15	15	38	36	24	23
of which Regions	*15*	*14*	*2*	*2*	*26*	*26*	*18*	*17*
Other public resources including the Employment Office	3	2	1	1	3	4	3	3
Public fund sub-total	**27**	**25**	**30**	**25**	**41**	**40**	**31**	**30**
Other training organisations	**3**	**3**	**13**	**12**	**1**	**2**	**3**	**3**
Other resources (including VAE)	**4**	**4**	**7**	**5**	**6**	**5**	**5**	**4**
Total resources	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Source: MEN-MESR-DEPP.

03 Types of public in universities, UTs, INPs and components (%)

Metropolitan France + DOM

Source: MEN-MESR-DEPP.

04 National diplomas delivered in continuing education by type of establishment

Metropolitan France + DOM

	Universities (IUT included) and INP		*Grands établissements* and public engineering schools		CNAM	
	2007	2008	2007	2008	2007	2008
Basic legal studies	130	176				
DAEU A	4,216	3,935				
DAEU B	952	757				
Total level IV*	**5,298**	**4,868**				
CNAM Diplomas DPC, DPCE, DPCT					1,021	127
DEUG, DEUG IUP, DEUST	610	892				
DUT + Post DUT, DNTS	2,640	2,205			36	32
RNCP Titles Level III	172	406	5		224	146
Paramedical Diploma Level III	121	30				
Total level III*	**3,543**	**3,533**	**5**		**1,281**	**305**
CNAM Diplomas DEST, DSC-DSG, DESA					4,886	559
Bachelor's degrees	3,369	2,869	7	5	87	323
Vocational degrees	6,608	8,517			373	574
Master's	1,997	1,876		2	123	
RNCP Titles Level II	210	260	10	18	1 653	1 090
Total level II*	**12,184**	**13,522**	**17**	**25**	**7,122**	**2,546**
CNAM C Diplomas					28	17
DESS	188	27				
DESCF	53	96				
Vocational Master's	6,843	6,956	12	12	384	349
Engineering Master's	119	72	171	191		
Research Masters	720	300	19	11		45
Undifferentiated Master's	1,069	2,007	3	3		48
DEA, DRT, doctorate, HDR	131	263			35	31
Engineering Diplomas (including CNAM engineers)	284	532	213	228	745	655
Basic Medicine studies	522	338				
RNCP Titles Level I	19	500			213	227
Total level I*	**9,895**	**11,091**	**418**	**445**	**1,405**	**1,372**
All diplomas	**30,973**	**33,014**	**440**	**470**	**9,808**	**4,223**

** See list of levels and acronym table in Appendix.*

Source: MEN-MESR-DEPP.

17

The qualification level of French people aged 25 to 64 is rising even though it remains relatively low. The cohorts who have just completed their studies account for 42% of higher education diplomas, including 27% on long general courses and 15% on short specific courses.

As in the Latin countries and Germany, France has a low proportion of adults holding a Higher Education degree (19th among OECD countries in 2008). Secondary and university education were less developed compared to the U.S. and Japan, when the generations currently aged 60 enrolled.
However, the youngest generations have benefited from important advances in secondary and higher education from 1985 to 1995. The proportion of higher education graduates among people aged 25 to 34 means that in 2008, France stood among the most advanced countries (*Graph 01*). France stands out for its high proportion of higher education graduates on short and specific courses (5th) and a smaller proportion of long-term qualifications leading to research (19th overall).

The European Union has reached agreement on the strategic development of higher education and research, aspiring towards a 40% higher education qualification rate across the EU in 2020 as against 31% in 2008 (among those aged 30-34). This constitutes a common direction rather than a standard. Several countries, including France and Denmark, are more ambitious. The French Constitutional by-law on budget acts (LOLF) aims for 50% of a given generation to gain a higher education diploma in 2012. Statistics on degrees awarded assess progress towards this goal and it is estimated that in the 2008 session, 44.7% of an age group obtained a higher education degree in France.

The generations of the late 1970s are twice as likely to graduate than those of the early 1960s: 44% of the generations born from 1979 to 1983 were higher education graduates in 2009, as were 21% of the generations born from 1961 to 1965 at the same age in 1991 (*Graph 02*).

42% of the generations who have just finished their studies are higher education graduates. 27% of leavers have pursued theoretical and long courses: 10% have a degree or master's degree, 15% a diploma certifying successful completion of a Master's cycle (five years) and 1% a research doctorate. In addition, 15% of leavers have accredited short specific courses (BTS, DUT, paramedical and social qualifications) (*Table 03*). With the development of the new "Licence Master Doctorate" cycles, the youngest generations are more likely to pursue their further studies to qualifications at Master's level, in particular a Diploma in Specialised Higher Education, and are on the contrary less likely to complete these courses with a qualification from a short targeted course. The share of young graduates on longer courses is witnessing slight growth.

In addition, 70,000 young people per year (9% of a generation) left higher education without validating their learning and their highest level of qualification is a *baccalauréat*. They represent less than 19% of those who have enrolled, as confirmed by the student panel. France aims to reduce this percentage to 15% in 2010. Young people whose highest qualification on finishing their studies belongs to the upper secondary cycle represented 40% of the total generation and those holding the National Certificate or with no degree accounted for 18%.

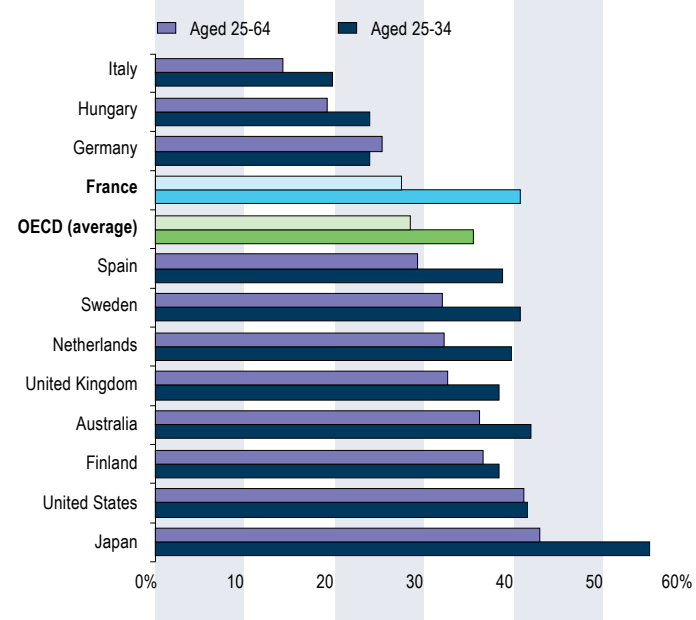
Tables and Graphs 02 and 03 are based on employment surveys from INSEE, as is 01 for France.
Graph 02 relates to the qualifications declared by those present in metropolitan France at 25-29 years (as of January 1), i.e. the generations born between 1979 and 1983 in 2009.
Table 03 focuses on generations or sub-populations who first interrupted their studies (or "left initial education") in the same year. Data on the cohorts "leaving year n" are gathered in the following year (survey "n+1". The data in Table 03 refer to the average of three such cohorts (the 2008 generation surveyed in 2009, 2007, 2008, etc.). The margins of error are at least + /- 1 point: 42% is not really different from 43%.

Moreover, the annual statistics of diplomas issued each year are used to estimate the proportion of higher education graduates among all young people of a given age group. These statistics provide a benchmark for a LOLF indicator

Source: OECD and MESR-DEPP based on INSEE Employment surveys.
Scope: Metropolitan France.

Level of education among the population and among young people

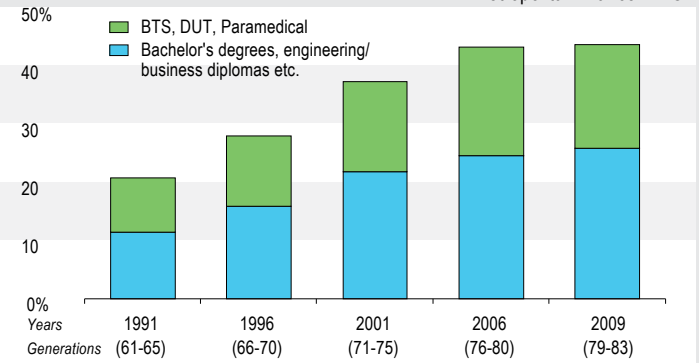
01 Proportion of higher education graduates in the population (2008) (%)



Source: OECD, *Education at a Glance* 2010 (based on Labour Force Surveys)

02 Proportion of higher education graduates according to generation (%)

Metropolitan France + DOM



Interpretation: in 2009, 44% of young people born between 1979 and 1983 declared at the beginning of 2006 that they held a higher education diploma compared to 21% of the generations born in the early '60s at the beginning of 1991.

Source: DEPP calculations (INSEE Employment surveys in March 1991, 1996, 2001 and for the first quarter of 2006 and 2009).

03 Breakdown of generations leaving initial education by highest qualification

Metropolitan France + DOM

Highest qualification (ISCED*)	ISCED*	2003-2005 generations (average) in th.	2003-2005 generations (average) %	2006-2008 generations (average) in th.	2006-2008 generations (average) %
PhD (except medicine)	**6**	**5**	**1%**	**7**	**1%**
Health care doctor diploma (medicine)	5A	7	1%	6	1%
Diplôme d'études approfondies (diploma testifying to five years of tertiary education), *magistère* (post-grad. vocational qualification)	5A	12	2%	10	1%
Engineering degree	5A	22	3%	24	3%
Degrees from other schools	5A	24	3%	20	3%
Diplôme d'études supérieures spécialisées (post-graduate diploma)	5A	31	4%	47	7%
Total "Master's level"	**5A**	**96**	**13%**	**107**	**15%**
Master's	5A	33	4%	22	3%
Bachelor's degree	5A	44	6%	56	7%
Total "Bachelor's degree level"	**5A**	**77**	**10%**	**78**	**10%**
DEUG	5A	6	1%	5	1%
Subtotal courses possibly leading to research	**5A**	**184**	**25%**	**197**	**27%**
Paramedical and social studies diplomas (nurses)	5B	25	3%	24	3%
DUT, DUEST	5B	14	2%	11	2%
BTS and equivalent	5B	84	12%	77	10%
Total completed courses	**5B**	**123**	**17%**	**112**	**15%**
Total higher education	**5/6**	**307**	**42%**	**309**	**42%**
Baccalauréat or equivalent	3A/C	163	23%	171	23%
of which: have followed higher education courses	3A/C	*77*	*11%*	*70*	*9%*
CAP, BEP or equivalent	3C	126	17%	123	17%
Total upper secondary school leavers with diploma	**3A/C**	**289**	**40%**	**294**	**40%**
National vocational diploma (DNB)	2	53	7%	64	8%
No qualification	0/2	77	11%	72	10%
Total DNB or less	**0/2**	**130**	**18%**	**136**	**18%**
All education/training options		**726**	**100%**	**739**	**100%**

* La classification internationale type des enseignements (CITE) de l'UNESCO permet de comparer entre pays statistiques et indicateurs sur l'enseignement (*cf. annexe*).

Source: calculs DEPP à partir des enquêtes Emploi de l'INSEE 2004 à 2009 (moyenne annuelle).

18

The children of managers and the self-employed succeed in proportions comparable to those of employees and workers in specific short courses such as a BTS or paramedical training. In contrast, children from disadvantaged groups are 3-4 times less successful than the latter in courses such as Master's, *grande école* or doctorate.

Developments in secondary and higher education have resulted in its increasing openness to students from social environments who were previously denied access. A general assessment can be made here of accessibility and its limits by comparing the extent to which different social groups pass the *baccalauréat* stage and move on to higher education and their breakdown according to highest qualification obtained

In the generations born in the 1940s, over 66% of children with management-level parents attained the *baccalauréat* compared with only 6% of working-class children. In more recent generations, half of working class children have obtained a *baccalauréat* (*Graph 01*). This advance has been particularly rapid in the space of ten years. Difficulties in accessing the *baccalauréat* between social classes are less pronounced in the generations born between 1974 and 1978 than among their elders born between 1964 and 1968. From this point of view, progress made at the end of the '80s has contributed to a reduction in educational inequalities.

In line with developments in secondary education, higher education considerably widened its recruitment base at the beginning of the nineties. Nearly twice as many children of working class and employee parents enrolled in higher education in 2001 than in 1991. Trends in inequality of access between social classes are difficult to interpret. On the one hand, access to higher education has increased as much, in absolute terms, for the children of the self-employed, managers, teachers and intermediate professions as for the children of workers and employees (by about 20 points) (*Graph 02*). On the other, the indicators used to measure inequalities show they are slightly decreasing, including at *grandes écoles*, where they remain significant however.

One of the aims of the LOLF is to increase the proportion of working class and employee children aged 20-21 continuing into higher education to 50% in 2010; they were 39% among the 20-24 age group in 2009.

In 2009, the children of self-employed, managers and intermediate professionals aged 25-29 were nearly twice as likely to be graduates of higher education than children of workers and employees of the same age. Inequalities between social groups were somewhat lower in 2009 than in 1999 (*Graph 03*). However, children of the former are 3 to 4 times more successful than those of workers and employees on long-term courses in *grandes écoles* or university (master's and doctorate levels). However, both groups contain similar proportions of young people whose highest qualification is a BTS, DUT or paramedical or social work qualification (ratio close to 1). Moreover, comparable percentages of young people in these groups leave higher education without the desired diploma, i.e. children of workers and employees fail more as a proportion of entrants.

*Graph 01 concerns **generations** i.e. young people born in the same year. It is based on the Formation et Qualification Professionnelle (FQP: Training and vocational qualification) and Employment surveys conducted by INSEE. Access to the baccalauréat is measured by surveys at intervals of 5 years, conducted among generations aged 21-25.*
Diplomas close to the baccalauréat are not assimilated.

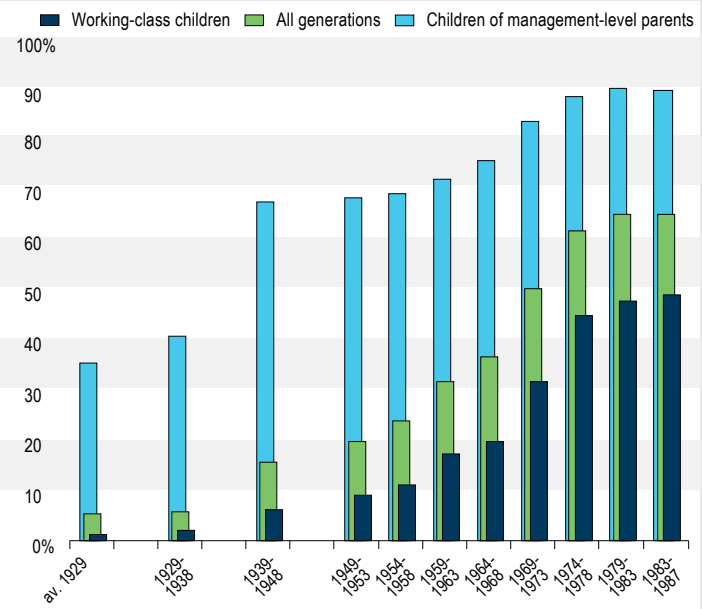
Graphs 02 and 03, based on the same employment surveys, also reflect age groups corresponding to generations (age as of 1 January) Those aged 25-29 in 2009 were born between 1979 and 1983, those in 1999 between 1969 and 1973 (Graph 03).

***"Social background"** is determined on the basis of parents' socio-professional category, (SPC) particularly that of the father. The SPC of the retired or unemployed is usually that of the last position held.*

Source: Sources: INSEE Employment, Training and Vocational Qualification Surveys. Scope: Metropolitan France.

01 Baccalauréat pass rate according to generation and social background

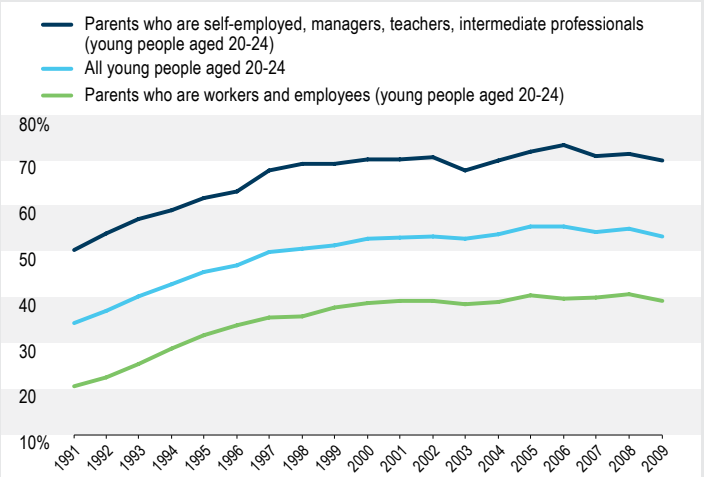
Metropolitan France



Sources: FQP and Employment surveys by 'INSEE.

02 Access to higher education for young people aged 20-24 according to social background, from 1984 to 2009

Metropolitan France

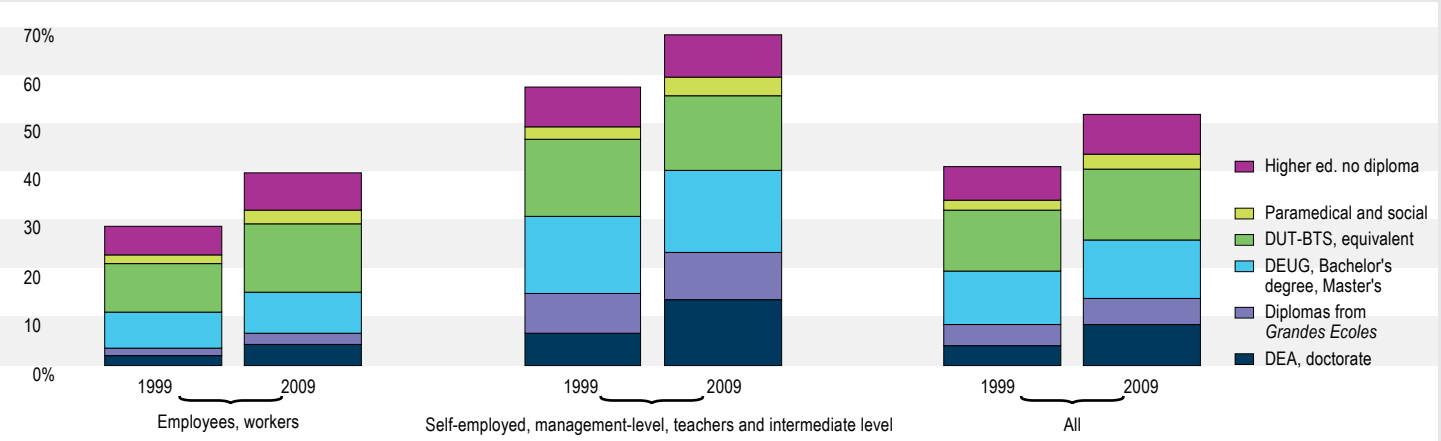


Interpretation: 70% of youth residing in metropolitan France aged 20 to 24 years whose parents are self-employed, managers or intermediate professionals state they are studying or have studied in higher education, as against 39% of children of workers and employees In the first half of 2009.
(The profession of their parents and particularly that of their fathers.)

Source: MESR-DEPP calculations based on INSEE Employment surveys, 1990 to 2009 (first two quarters since 2003).

03 Qualifications of young people aged 25-29 by social background (1999 and 2009)

Metropolitan France



Interpretation: in 2009, 32% of children of employee and working class parents aged 25 to 29 claimed to hold a higher education qualification compared to 60% of children of self-employed, managerial-level, teacher and intermediate-profession parents; only 2% of the former indicated holding a diploma awarded by a Grande Ecole compared to 10% of the latter.

Source: DEPP calculations based on INSEE 1999 and 2009 Employment surveys (annual average).

19

Qualifications have never been so valuable and despite the crisis, the hierarchy of qualifications remains unchanged. For decades, possession of a *baccalauréat* + 5 has proven a greater asset in terms of access to employment, employment contract, professional position or salary, than possession of a *baccalauréat* + 2.

Employability conditions for those leaving higher education are far from homogenous. Beyond the divide between graduates and undergraduates, there are other mechanisms at work: the effect of level of course, but also that of the courses concerned (sciences proper versus the humanities and social sciences, vocational versus general courses, "*grandes écoles*" versus universities...)

Starting out on the labour market is particularly difficult for those leaving higher education without qualifications although, leavers from STS or IUT suffer less from the non-validation of their degrees than those who fail university after the *baccalauréat*.
The employability prospects of those possessing a *baccalauréat* + 2 differ widely depending on the courses pursued: unemployment rates by sector three years after completing education vary between 6% and 16%. Certain professional degrees such as the Industrial DUT still provide a real advantage in terms of employability but also in terms of stability once in employment.

At L-level, entry into working life is relatively easy for graduates with a vocational license. Three years after their entry into working life, over 90% of them are employed, with the vast majority on indefinite contracts. The proportion of those working part-time is very low, including those from service-sector courses.
At Bac + 5 level, it is always business and engineering school graduates who face the most positive employment prospects. However, those from certain university courses such as Masters and post-graduate diplomas in computing face entirely comparable employment prospects. Law, economics and management graduates experience fewer problems in starting their professional careers than their humanities counterparts, whether the latter have completed a professional or research Master's. Despite a lower unemployment rate, it appears they are more likely than their counterparts in the hard sciences to have to accept a position in an intermediate profession rather than a management post following a vocational master's.

Conditions for entering the job market for new PhDs also vary widely depending on the type of doctorate. While medicine graduates (doctors, pharmacists) have a very low unemployment rate (2%), those of chemistry are more likely to face this problem (15%). Graduates of engineering sciences and computing occupy an intermediate position (6%) while it reaches 10% for those from humanities courses. Overall, most (92%) of PhDs employed at the time of the survey have become managers, but this proportion also varies greatly depending on the discipline of origin: it applies to only 79% of PhDs in literature, languages and arts.
In terms of wages, qualification levels being equal, the advantage clearly lies with vocational courses. The worst off are humanities graduates while law, economics or science graduates occupy an intermediate position. This salary advantage can transcend levels. The highest median salary (over €2,000) is found among doctors of medicine or pharmacy, engineering and business school graduates, and doctors in law or science. But Master's graduates in humanities (with €1,450) have a median income lower than that of industrial DUT graduates and equivalent to industrial BTS graduates.

The above data are taken from a survey conducted in spring 2007 by CEREQ (Centre d'études et de recherches sur les qualifications: Centre for study and research in training and education policy) among 65,000 young people - among 705,000 school leavers in 2004 as part of the investigation entitled "Generation 2004".
Surveys conducted by CEREQ of young people entering the workforce, at intervals of three years, enable the analysis of the career paths of new generations of young school leavers during their first three years on the labour market.

This survey covers French or foreign people under 35 years, leaving higher education in 2004, enrolled in training in the 2003-2004 school year, who did not interrupt their studies for a year or more before the 2003-2004 school year (except for health reasons) or return to school during the year following their entry into the labour market.

Source: CÉREQ.
Scope: Metropolitan France.

Professional Situation in 2007 of young people leaving higher education in 2004

	Unemployment rate (%)	Share of permanent contracts (1)	Share of part time	Rate of managers	Rate of intermediate professions (2)	Median salary
After dropping out from or failing the BTS or DUT	**13%**	**63%**	**11%**	**3%**	**34%**	**€1,250**
Industrial courses	*10%*	*70%*	*4%*	*2%*	*34%*	*€1,300*
Service courses	*15%*	*59%*	*16%*	*4%*	*34%*	*€1,200*
After dropping out from or failing the DEUG	**17%**	**53%**	**22%**	**5%**	**37%**	**€1,190**
in hard sciences	*15%*	*56%*	*19%*	*5%*	*33%*	*€1,200*
in law, economics, management	*18%*	*54%*	*17%*	*5%*	*38%*	*€1,200*
in arts and humanities	*18%*	*51%*	*25%*	*5%*	*37%*	*€1,150*
BTS	**8%**	**71%**	**8%**	**5%**	**49%**	**€1,310**
Industrial courses	*6%*	*73%*	*4%*	*5%*	*54%*	*€1,400*
Service courses	*10%*	*70%*	*11%*	*5%*	*45%*	*€1,260*
DUT	**8%**	**76%**	**6%**	**11%**	**56%**	**€1,410**
Industrial courses	*7%*	*72%*	*3%*	*8%*	*68%*	*€1,500*
Service courses	*9%*	*78%*	*7%*	*12%*	*49%*	*€1,370*
DEUG-DEUST	**12%**	**63%**	**20%**	**20%**	**43%**	**€1,260**
in Hard Sciences	*16%*	*71%*	*15%*	*20%*	*54%*	*€1,450*
in Law, Economics, Management	*12%*	*62%*	*20%*	*23%*	*37%*	*€1,260*
in Arts and Humanities	*9%*	*62%*	*27%*	*10%*	*53%*	*€1,200*
General Bachelor's degrees	**7%**	**70%**	**19%**	**16%**	**65%**	**€1,420**
in Hard Sciences	*5%*	*79%*	*14%*	*25%*	*66%*	*€1,500*
in Law, Economics, Management	*10%*	*73%*	*18%*	*17%*	*55%*	*v1,400*
in Arts and Humanities	*7%*	*66%*	*20%*	*14%*	*68%*	*€1,400*
Vocational Licenses	**6%**	**81%**	**3%**	**13%**	**65%**	**€1,500**
Industrial courses	*5%*	*81%*	*2%*	*10%*	*72%*	*€1,540*
Service courses	*6%*	*80%*	*5%*	*15%*	*58%*	*€1,470*
M1 University	**9%**	**70%**	**13%**	**32%**	**49%**	**€1,500**
Hard sciences (including Medicine, Life and Earth Sciences)	*5%*	*71%*	*9%*	*52%*	*39%*	*€1,550*
Arts, Languages, Literature	*8%*	*69%*	*15%*	*37%*	*49%*	*€1,500*
Human sciences, psychology and education	*7%*	*62%*	*18%*	*27%*	*54%*	*€1,450*
Economics, Management, Communication	*12%*	*77%*	*8%*	*25%*	*48%*	*€1,500*
Law, Political Science	*11%*	*74%*	*11%*	*23%*	*52%*	*€1,430*
Research Master's or DEA	**10%**	**74%**	**12%**	**56%**	**33%**	**€1 680**
in hard sciences	*12%*	*70%*	*8%*	*57%*	*37%*	*€1,700*
in law, economics, management	*7%*	*86%*	*5%*	*64%*	*29%*	*€1,850*
in arts and humanities	*13%*	*61%*	*27%*	*44%*	*37%*	*€1 450*
Vocational Master's or Post-graduate diploma	**7%**	**79%**	**6%**	**61%**	**31%**	**€1,820**
in hard sciences	*8%*	*79%*	*4%*	*69%*	*26%*	*€1,900*
in law, economics, management	*5%*	*84%*	*3%*	*60%*	*32%*	*€1,900*
in arts and humanities	*8%*	*66%*	*16%*	*53%*	*37%*	*€1,500*
Business schools Bac + 5	**6%**	**93%**	**3%**	**65%**	**27%**	**€2,300**
Engineering schools	**4%**	**92%**	**1%**	**87%**	**10%**	**€2,150**
PhD	**6%**	**72%**	**12%**	**92%**	**7%**	**€2,170**
in medicine, pharmacy	*2%*	*74%*	*15%*	*97%*	*3%*	*€2,520*
in hard sciences (excl medicine)	*9%*	*70%*	*5%*	*91%*	*98%*	*€2,050*
in law, economics, management	*6%*	*81%*	*10%*	*92%*	*6%*	*€2,100*
in arts and humanities	*10%*	*68%*	*21%*	*79%*	*17%*	*€1,840*
Total leaving higher education	**8%**	**74%**	**10%**	**25%**	**47%**	**€1,500**

(1) EDI *Emploi à durée indéterminée*: Indefinite contract
(2) PI: intermediate profession.

Source: CEREQ - Génération 2004 conducted in 2007.

20

In 2009, two and a half years after graduation, the rate of Master's graduate employment is 91.4%. Among those employed, 80% have management jobs or intermediate professional roles. Graduates in law, economics, management and science, technology and health-related subjects — including information technology — are those that enter the labour market most easily.

In 2009, two and a half years after graduation, the rate of graduate employment of master's graduates who did not pursue education after graduation (see explanatory note opposite) amounts to 91.4%, regardless of the type of job. 80% of the jobs are management-level or intermediate occupations. 75% of graduates are in stable employment (indefinite contract, civil servant, office, profession...). Two-thirds are employed in private companies as against 16% in the public sector and 9% in associations.
Differences in social origin, measured in terms of grants received and age on taking the *baccalauréat*, are still evident in terms of the employability of Master's graduates: students receiving grants on social criteria find work less easily than the others (89.4% against 92.2%). The same applies to *baccalauréat* holders who were 'behind schedule' (90%) compared with those who were "on time" (92%) or "ahead of schedule" (93%).
Similar differences apply to the field of study (*Graph 01*): the labour market integration rate was 92% in law, economics, management and science, technology and health, as against 90% in human and social sciences (SHS) and 87% in arts, humanities and languages. (ALL) Within the same field situations can vary across disciplines.

The fields of law, economics and management are fairly homogeneous in terms of employability, with rates ranging from 91% (economics) to 92.6% (management), as well as in terms of stable employment rate (82%) and the percentage of managers or professionals (79.5%) among the jobs occupied (*Graph 02*). Disparities between disciplines mainly concern these graduates' employers (*Graph 03*): a high proportion of public service in law (29%) and private companies in management (85%).

The field of SHS is characterised by a marked heterogeneity across subjects. The labour market insertion rate is very high in psychology (94%), but this often (39%) concerns part-time or split jobs and less than two thirds of these jobs are stable. Conversely, the labour market integration rate is relatively low in history and geography (86%), with a percentage of part-time or split jobs twice higher than the average (12%) and a rate for managers and intermediate professions which is lower than average (71%). Graduates in SHS, with the exception of computer science and communication, work mainly in the public sector and in associations.

The field of arts language and literature is characterised by much poorer labour market integration conditions than other fields: a lower than average labour market insertion rate (87% against 91.4%), a significantly higher part-time rate (16% against 6%), a lower proportion of managers and intermediate professionals and a lower rate of stable jobs (57% and 62% respectively).

In science, technology and health, two disciplines stand out for their particularly high rates of employability: Computing (96.6%) and engineering sciences (93.6%); the jobs occupied are often those of managers or intermediate professionals (92% and 90%).
Labour market integration conditions are more difficult in life and earth sciences (88.5%) and slightly below average in fundamental sciences (90%), due to the low rate observed for chemistry graduates (86% as against 94% in Mathematics and 93% in Physics).

*The labour market **integration rate** of Master's graduates is defined as the proportion of graduates employed, irrespective of job, of all graduates on the labour market (excluding from the analysis those still in school and those who are unemployed but say they are not seeking employment).*

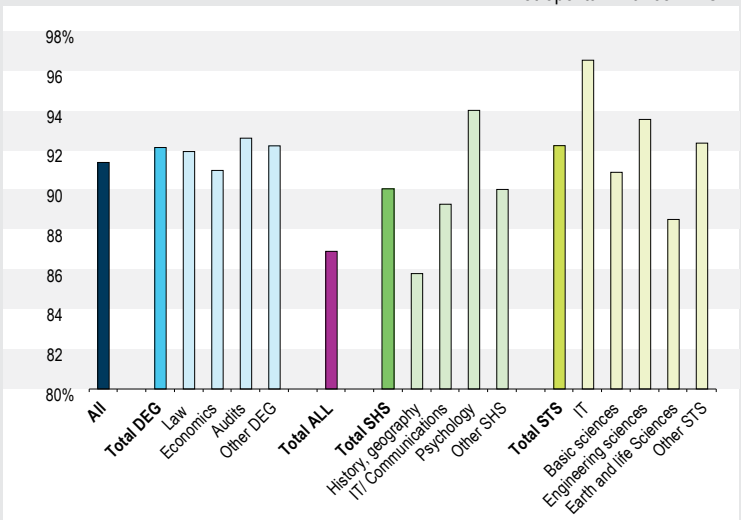
The social background of students is indirectly assessed through two criteria known to be strongly correlated: the fact or not of receiving a grant based on social criteria and the age of obtaining the baccalauréat.

The data presented here are from the survey conducted by the MoR and public universities in metropolitan France and French overseas departments, except those who did not wish to participate (Marne la Vallee, Paris Dauphine, Lyon 3). This survey was conducted in December 2009, 30 months after graduation, with 43,000 Master's graduates of the 2007 session satisfying the following conditions: having French nationality, having obtained a diploma in training and not having pursued or resumed studies within two years of gaining the Master's.

Source: MESR-DGESIP/DGRI-SIES.
Scope: Metropolitan France + DOM.

01 Employability rates by discipline (%)

Metropolitan France + DOM

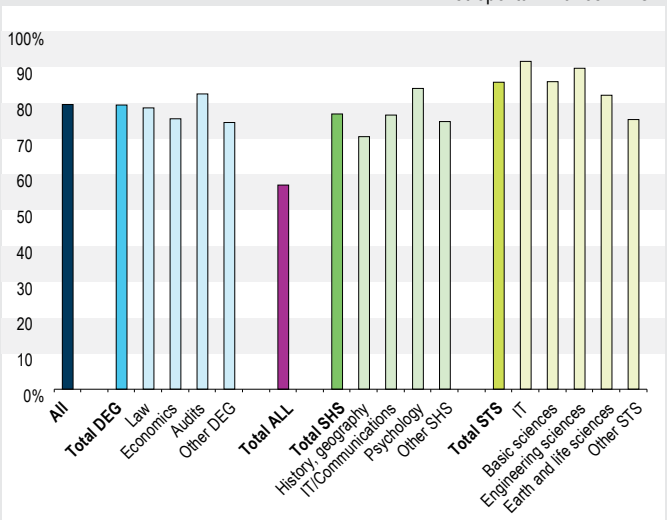


DEG: Law, economy, management
ALL: Arts, languages. literature
SHS: Human and social sciences
STS Sciences, STAPS, health -related subjects

Source: MESR-DGESIP/DGRI-SIES.

02 Rate of managers and intermediate professions by (%)

Metropolitan France + DOM

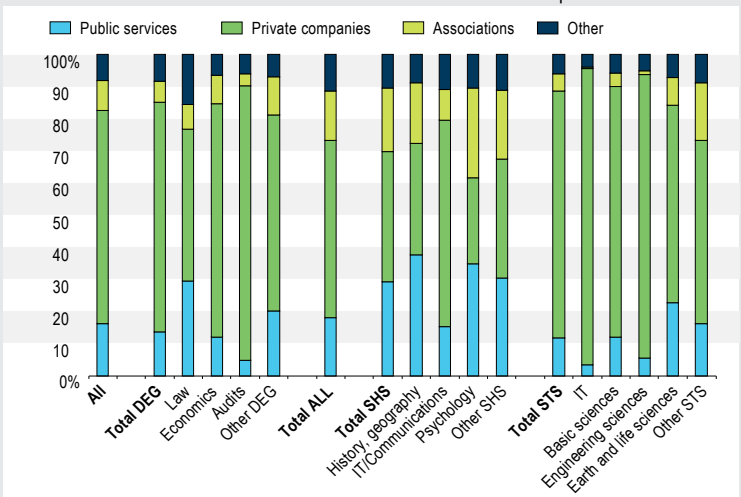


DEG: Law, economy, management
ALL: Arts, languages. literature
SHS: Human and social sciences
STS Sciences, STAPS, health -related subjects

Source: MESR-DGESIP/DGRI-SIES.

03 Breakdown of main employers (%)

Metropolitan France + DOM



DEG: Law, economy, management
ALL: Arts, languages. literature
SHS: Human and social sciences
STS Sciences, STAPS, health -related subjects

Source: MESR-DGESIP/DGRI-SIES.

21

Funding for national research via budgetary credits in France absorbs 0.75% of state budget resources through public R&D institutions and business support measures and incentives. Local governments and the European Union contribute to supporting innovation.

Budget funding of research and development (R&D) by the State falls mainly within the framework of the MIRES (*Mission interministérielle recherche et enseignement supérieur*: Inter-ministerial Mission for Research and Higher Education.). Government budget credits for R&D (CBPRD) cover R&D in public institutions, as well as in other sectors of activity in France and abroad. They include public service subsidies and credits to finance targeted research programmes for public R&D bodies, university research and research project funding agencies, various R&D assistance schemes and incentives and public/private partnership research. They also concern the financing of measures for the dissemination of scientific and technical culture (*Graph 01*).

Indirect support for R&D is implemented through various mechanisms - financial and repayable advances - which are not accounted for in CBPRD.

In 2008, the MIRES R&D budget amounted to €15 billion.

The local government budget for research and technology transfer (R&T) is estimated at €1.07bn. These loans are partly allocated under state regional project contracts (CPER).

The EU works with public and private actors of R&D through research programmes including the European Framework Programme for Research and Development (FP7), which covers the period 2007-2013. In 2007, France received €0.5bn or 15% of these funds.

The R&D achievement of a country is measured by indicators of two different kinds, one relating to the implementation of R&D, the other to its funding. The first indicator, selected for international comparison, tracks domestic expenditure on research and development (GERD), which relates to R&D carried out nationally, in all institutional sectors and regardless of the source of funds.

The second indicator notes, without duplication, national research and development expenditure (NRDE) whether in terms of funding by French administrative entities or companies of research carried out in France or abroad. For each R&D operator, external spending (EERD) corresponds to relationships with outsourcing partners.

In 2008, GERD amounted to €41.1bn. The R&D effort measured by GERD/GDP ratio stood at 2.11%.

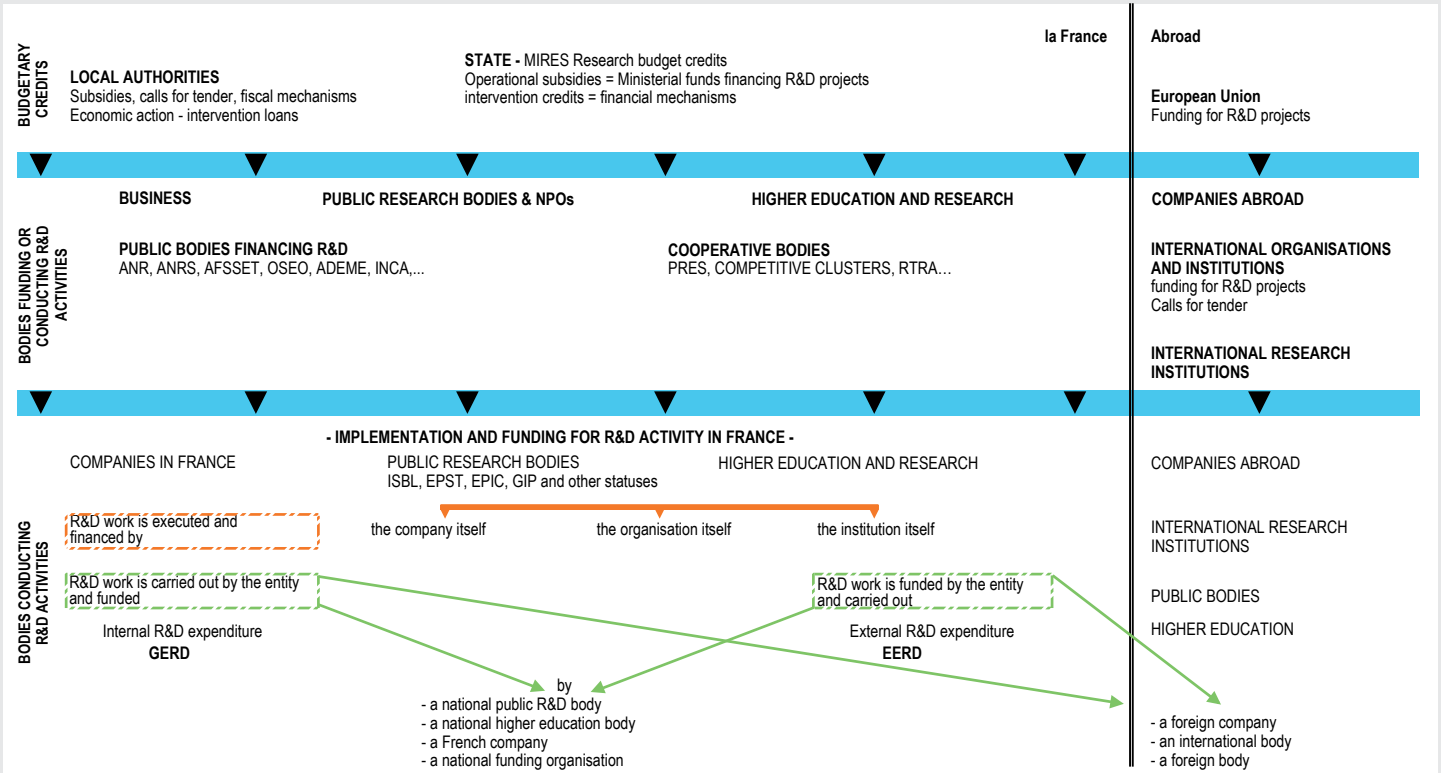
Administration research expenditure represents 37% of national GERD and business research (Business-funded GERD), 63%. The implementation of R&D in France for the benefit of stakeholders abroad represents 8.0% of national GERD.

NRDE rose to €42.2bn in 2008. 46% is provided by government and 54% by companies. The foreign sector represents 10.4% of French funding for research (*Graph 02*).

Resources devoted to carrying out R&D for companies are 71% self-funded and for the public sector, budgetary credits account for 73% (*Graph 03*).

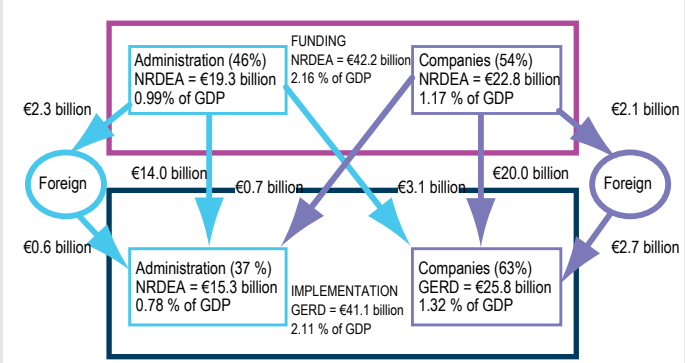
R&D includes all activities undertaken "systematically to increase the stock of knowledge and use of this stock of knowledge to devise new applications".
***The five institutional sectors are: the state** (government departments and agencies for R&D - EPST, EPIC, EPA - civilian and military, government authorities), higher education (public higher education institutions including CNRS; hospitals and academic centres for the fight against cancer), **non-profit institutions** (NPIs); **businesses**; abroad (public or private operators located outside the national territory and international organisations including the European Union).*
The main measure of the tax system for R&D is the research tax credit (CIR). .
A repayable advance is a loan made by the State to companies engaging in experimental development activities. Its repayment is conditional upon the commercial success of new products.
The research and technology (R&T) budget of local authorities is the totality of funding for R&D activities in universities and public bodies, to support innovation and research in business, to promote the transfer of technology, promote research results, develop scientific and technical culture. In 2008, regional councils primarily funded technology transfer (27.3% of loans), real estate (26.7%), and support for research projects (15.6%).

01 Research and development funding



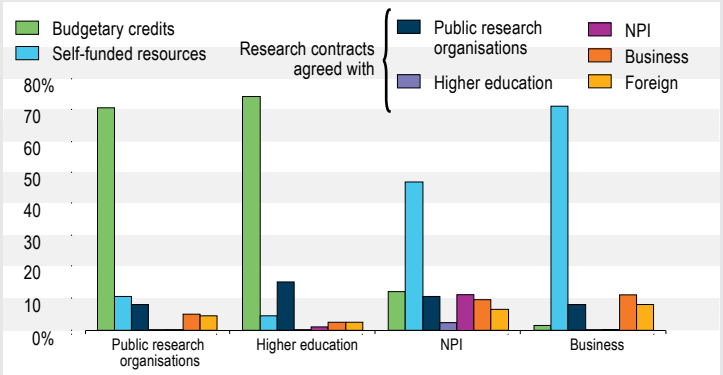
Source: MESR-DGESIP/DGRI-SIES.

02 R&D funding and implementation in France 2008 (results semi-definitive)



Sources: MESR DGESIP/DGRI-SIES et INSEE.

03 Origin of R&D resources by activity sector 2008



Interpretation: resources devoted to R&D activity by companies are 71% self-funded

Source: MESR-DGESIP/DGRI-SIES.

22

Having doubled since 1981 at constant prices, domestic expenditure on research and development represented 2.11% of GDP on 2008, i.e. €4.1 billion; in 2009 it was estimated at 2.21% of GDP. Research is mainly undertaken by companies, who carried out 63% of R&D in France in 2008, and financed 54% of this work.

In 2008, R&D carried out in France represented expenditure amounting to €41.1bn — 2.11% of national wealth (GDP). In 2009, GERD amounted to €42.1bn (2.21% of GDP) with expenditure on R&D in companies maintained, despite the economic crisis and a rise in public funding. Companies carried out 63% of GERD (*Table 01*). Research activity was very concentrated geographically: in 2008, the four leading French regions (Île-de-France, Rhône-Alpes, Midi-Pyrénées and Provence-Alpes-Côte d'Azur) alone represented nearly 68% of regional GERD, while producing half of GDP.

Between 1981 and 1993, R&D initiatives in France (a volume of 4% per year on average) grew faster than GDP (2% per year on average). Since 1993, the trend has been reversed: over this period, the average annual rate of growth for GERD was 1.3% while GDP continued its annual average growth of 2.1%. A resumption of R&D effort was observed from 1999 to 2002 (*Graph 03*), GERD recorded a growth rate averaging 3.4% higher than GDP growth (2.3% on average per year).

In 2008, R&D funding by companies or French administrative entities reached €42.2bn — 2.16% of national wealth (GDP). In 2009, this would increase to €43.2 billion. Since 1995, funding by companies has exceeded funding by administrative entities (*Graph 02*). From 1981 to 2004, national R&D funding increased significantly at the same rate as research and development activity within the national territory (around 2.7% per year on average). Trends in national research and development expenditure (NRDE) over this period were marked by the slow erosion of public funding between 1992 and 1998 (average drop of 2% per year), and then its steady recovery as of 1999 (+2.5% per year on average between 1998 and 2004).

In covering 54% of NRDE in 2008, companies remain the main source of funding for R&D activity.

The difference between GERD and NRDE represents the balance of R&D exchanges between France and foreign countries, including international organisations. In 2008, funding received from foreign countries and international organisations (€3.3bn) was less than expenditure by administrative entities and French companies abroad (€4.4bn). The main international players, apart from the large multinational groups, are the European Space Agency, the European Union and the European Organisation for Nuclear Research.

With 2.11% of GDP devoted to domestic research in 2008, France is below the 3% target set by the EU in 2000 as part of the "Lisbon strategy" and occupies 5th place among the five largest countries of the OECD (*Graph 04*), behind Japan (3.42%), South Korea (3.37%), United States (2.77%) and Germany (2.64%), and ahead of the United Kingdom (1.77%). But within the OECD, the two countries spending the largest share of their GDP on R&D: Sweden (3.75%) and Finland (3.73%) are of average economic size.

Research and experimental development (R&D) activity includes all development activity systematically engaged in order to increase the amount of knowledge available for new applications.
To calculate global R&D expenditure, we refer either to implementation of R&D activity or to its funding by the two major economic players: administrative entities and companies. Administrative entities refers here to ministerial departments, public research organisations, higher education and non-profit organisations. This is the classification used by the organisations responsible for international comparisons.

Two main indicators are thus used:
*- **Gross domestic expenditure on research and development (GERD)** which concerns R&D carried out on the national territory (Metropolitan France and overseas departments) whatever the origin of funds;*
*- **National research and development expenditure (NRDE)** concerning funding by French administrative entities or companies of research carried out in France or abroad.*
These totals are mainly based on the results of annual surveys concerning the means dedicated to R&D in companies and administrative entities.
R&D data in France are taken from an annual survey in each institutional sector, a survey carried out in 2009 and 2010 for the 2008 exercise.

Sources: Sources: MESR-DEPP, INSEE and OECD.
Scope: All of France (Metropolitan France + DOM + COM + New Caledonia).

01 R&D funding and implementation in France

All of France

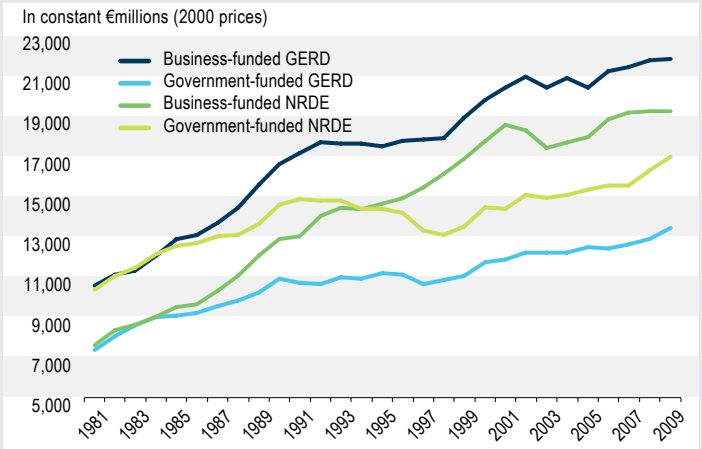
	2005	2006	2007	2008 (sd)	2009 (e)
R&D implementation					
GERD					
at current prices (€m)	36,228	37,904	39,303	41,053	42,080
at 2000 prices (€m)	32,857	33,576	33,971	34,590	35,272
% of GDP	2.10%	2.10%	2.07%	2.11%	2.21%
Business-funded GERD					
% of GERD	62.1%	63.1%	63.0%	62.8%	61.9%
Government-funded GERD *					
% of GERD	37.9%	36.9%	37.0%	37.2%	38.1%
R&D funding					
NRDE					
at current prices (€m)	36,654	38,738	40,106	42,150	43,205
at 2000 prices (€m)	33,244	34,315	34,665	35,514	36,215
% of GDP	2.12%	2.14%	2.12%	2.16%	2.27%
NRDE					
% of NRDE	53.8%	54.7%	55.1%	54.2%	53.1%
Government-funded NRDE *					
% of NRDE	46.2%	45.3%	44.9%	45.8%	46.9%
International R&D exchanges					
at current prices (€m)					
Resources	2,727	2,645	2,940	3,304	3,525
Expenditures	3,154	3,479	3,743	4,401	4,649
Balance	**- 427**	**- 834**	**- 803**	**- 1 097**	**- 1 125**

Break in the sequence: from 2006 companies employing less than 1 full-time equivalent researcher are included in the results
* Public and private administrative entities (State, higher education and non-profit organisations).
(sd): semi-definitive, (e): estimation.
Value of GDP calculated in May 2010

Sources: MESR-DGESIP/DGRI-SIES and MEN-MESR-DEPP.

02 Evolution (1981-2009) in GERD and NRDE* for businesses and administrative entities in 2000 prices

All of France

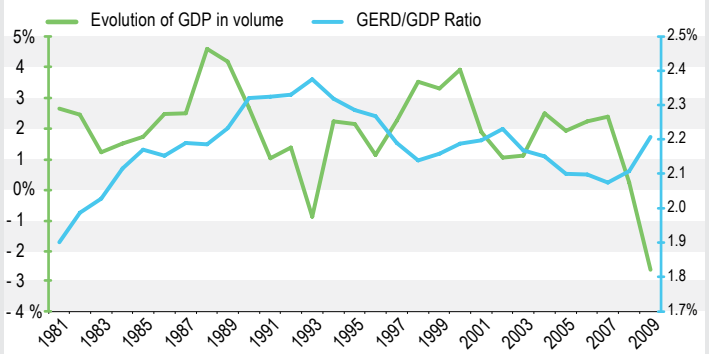


* Breaks in series in 1997, 1998, 2000, 2001, 2004 and 2006 (changes in methodology)

Source: MESR-DGESIP/DGRI-SIES.

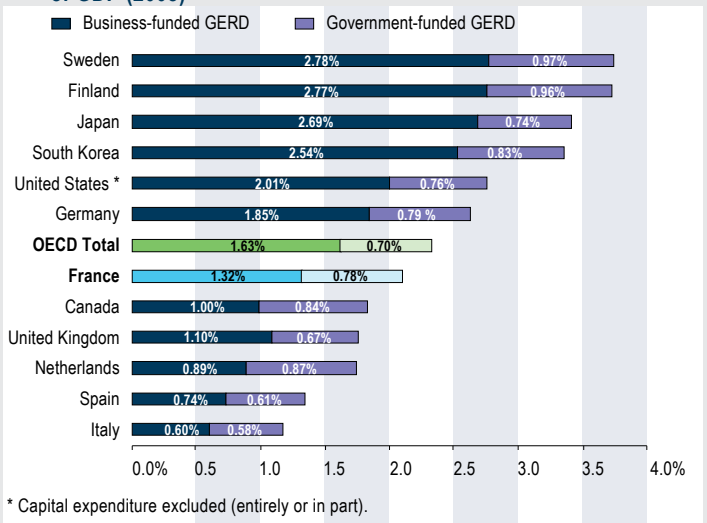
03 Evolution (1981-2009) in proportion of gross domestic expenditure on R&D in GDP

All of France



Sources: MESR-DGESIP/DGRI-SIES and MEN-MESR-DEPP.

04 Gross domestic expenditure on R&D in OECD as percentage of GDP (2008)



* Capital expenditure excluded (entirely or in part).

Sources: OCDE (PIST 2010-1) and MESR-DGESIP/DGRI-SIES.

23

In the private sector, five research sectors (automotive, pharmaceuticals, aeronautics, chemistry and electronic components) account for 52% of gross domestic expenditure on R&D by businesses in 2008. In the public sector, (EPST and EPIC) research organisations account for 53% of gross domestic expenditure on R&D by public administrative entities in 2008.

In 2008, gross domestic expenditure on research and development by businesses (business-funded GERD) amounted to €25.8bn euros and by public administrative entities (Government-funded GERD), to €15.3bn (*Table 01*). Compared to 2007, the change in GERD resulted from the simultaneous increase in government spending (2.4% at constant prices) and that of companies (1.5%) (*Table 01*). According to recent estimates, government spending rose sharply in 2009 (+4.3% in volume) while that of companies rose more slowly (+ 0.6% by volume).

Distribution of business-funded GERD among the main research sectors shows that it was highly focused and specialised in high technology sectors (*Table 02*). Five research sectors attract 52% of research and development potential: automotive (17% of business-funded GERD), pharmacy (13%), aircraft construction (11%), chemicals (6%) and components, circuit boards, computers and peripheral equipment (5%). Among these industries, the automotive is the only one not defined as a high-technology activity and owes its first place to its importance in the national industrial base. In some ten years, the position of the automotive industry has gained in importance to the detriment of aeronautical construction (which was the leading research branch until 1997).

In 2008, the business share in R&D activity in France reached nearly 63%, ranking France on a par with the United Kingdom but behind Japan (75%), the United States and Germany (70%) (*Graph 04*). However, when making international comparisons it should be observed that research in French companies does not cover the country's entire technological and industrial range. A fair amount of high-level technological R&D is carried out within public research organisations or foundations.

Public-sector research is carried out mainly in research organisations (53% of Government-funded GERD in 2008), higher education institutions (36%) and Ministry of Defence laboratories (6%) (*Graph 03*). In 2008, 58% of domestic expenditure on R&D by public research organisations (€8.2 billion) was accounted for by EPSTs and 42% by EPICs. There are nine EPSTs of varying sizes: as a multidisciplinary agency, CNRS (*Centre National de la Recherche Scientifique*:- National Council for Scientific Research) accounts for 59% of EPST Government-funded GERD, INRA (*Institut National de la Recherche Agronomique*: National Institute for Agricultural Research), 15% and INSERM (*Institut National de la Santé et de la Recherche Médicale*: National Institute for Health and Medicine Research), 14%. EPIC research activity is also highly concentrated with 62% at the CEA (*Commissariat à L'Energie Atomique*: Atomic Energy Commission) and 13% at the CNES (*Centre National d'Etudes Spatiales*: National Space Agency), the remainder being carried out in the twelve other EPICs. Between 2007 and 2008, GERD grew at constant prices in higher education (+8.2%) but decreased in EPST (- 0.3%)*, INSERM, INRIA and IRD although there were positive trends in EPICs (- 1.8%) and in Defence (- 2.5%).

* This development is partly explained by the change in VAT in 2008 of EPSTs, automatically resulting in reduced spending. An estimate (from budget data) of the change of EPST GERD to a constant VAT regime would indicate a growth of + 3.1% rather than - 0.3%.

In R&D statistics, an institutional sector refers to a set of units with an equivalent economic performance.The ***five institutional sectors*** *in selected international statistics are: the* ***State*** *(including Defence),* ***higher education, non-profit institutions*** *(NPIs),* ***companies*** *(whether public or private) and* ***foreign*** *(including international organizations).*
The state, higher education and NPIs are grouped under the term "government" or "public sector". The State institutional sector is composed of public scientific and technological bodies (EPST), public industrial and commercial bodies (EPIC), public administrative entities (EPA) and corporate services (including defence). The State institutional sector comprises EPSTs, EPICs, EPAs and Ministerial departments (including defence).The higher education sector comprises higher education institutions (universities and Grandes Ecoles), university hospitals (CHU) and cancer research centres (CLCC). For the purpose of international comparisons, CNRS comes under higher education. In the company institutional sector, domestic expenditure on R&D is distributed among one or several sectors of economic activity benefiting from R&D. These 32 research sectors are based on the classification of French economic activities (NAF Version 2).

Sources: MESR-DGESIP/DGRI-SIES et MEN-MESR-DEPP.
Scope: All of France.

01 R&D implementation in France by companies and public administrative entities

All of France

	2005	2006	2007	2008 (sd)	2009 (e)
Business-funded domestic expenditure on R&D					
at current prices (€m)	22,503	23,911	24,753	25,768	26,052
at 2000 prices (€m)	20,409	21,180	21,395	21,711	21,837
Annual growth rate in terms of volume *	- 2.1%	3.8%	1.0%	1.5%	0.6%
Government-funded domestic expenditure on R&D **					
at current prices (€m)	13,725	13,994	14,550	15,285	16,029
at 2000 prices (€m)	12,448	12,396	12,576	12,878	13,435
Annual growth rate in terms of volume *	2.1%	- 0.4%	1.5%	2.4%	4.3%

Break in the sequence: from 2006 companies employing less than 1 full-time equivalent researcher are included in the results
* Evaluated on the basis of changes in the price of GDP (2000 base)
** State, higher education and non-profit organisations.
(sd): semi-definitive, (e): estimation.

Sources: MESR-DGESIP/DGRI-SIES.

02 Distribution of business-funded GERD by research user-branch in 2008

All of France

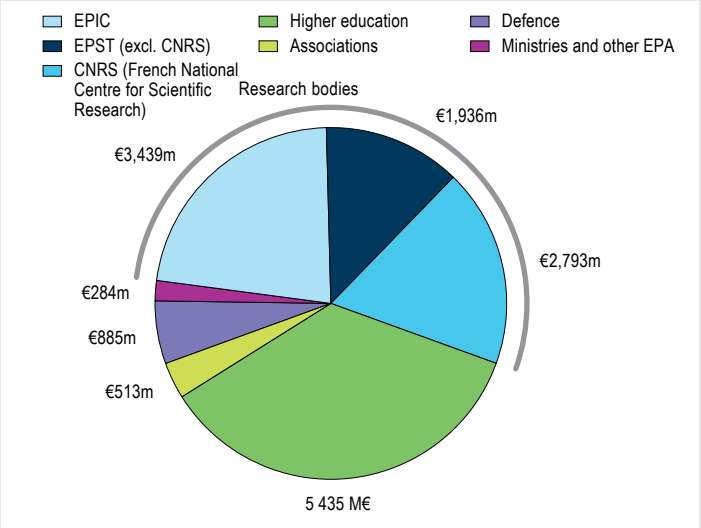
Main research sectors *	Business-funded domestic expenditures on R&D		
	In €m	% of total	2008-2005 evolution in volume % (1)
Industrial sectors	**22,918**	**88.9%**	**- 0.7%**
Automotive industry	4,306	16.7%	6.1%
Pharmaceutical industry	3,413	13.2%	- 4.8%
Aeronautical and space construction	2,738	10.6%	4.7%
Chemical industry	1,437	5.6%	- 3.2%
Components, circuit boards, computers, peripherals	1,377	5.3%	- 12.7%
Manu. of instruments and measuring apparatus, testing and navigation, watchmaking	1,187	4.6%	- 1.2%
Manu. of telecoms equipment	1,167	4.5%	- 8.8%
Manu. machinery and equipment	934	3.6%	7.4%
Telecommunications	847	3.3%	2.9%
Other industrial sectors	5,513	21.4%	- 1.5%
Service sectors	**2,850**	**11.1%**	**23.6%**
Specialised, scientific and technical equipment	1,067	4.1%	35.2%
IT and information service activities	947	3.7%	6.4%
Other service sectors	836	3.2%	33.4%
Total	**25,768**	**100.0%**	**1.5%**

* From 2008, these research sectors were described using the revised NAF (French classification of economic activity)
(1) At constant Euro prices.

Sources: MESR-DGESIP/DGRI-SIES.

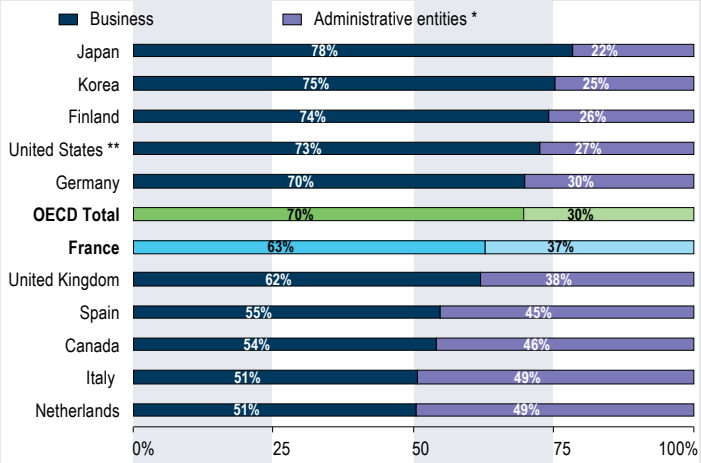
03 Public research players in 2008 (proportion of DIRDA)

All of France



Source: MESR-DGESIP/DGRI-SIES.

04 Share of GERD engaged by companies and public administrative entities in OECD in 2008



* State, higher education and non-profit organisations.
** Capital expenditure excluded (entirely or in part).

Sources : OCDE (PIST 2010-1) et Sources: OCDE (PIST 2010-1) and MESR-DGESIP/DGRI-SIES..

24

In 2008, budgetary allocations used by administrative entities for research and development amounted to €16.2bn and funded 77% of their total R&D activity. Internal business R&D (Business-funded GERD) is 86% funded (€22bn) by companies located in France, with public resources funding 12%.

In 2008, the resources available to administration for their entire R&D activity (whether conducted in-house or outsourced) amounted to €21.1bn (*Table 01*) They consisted mainly of budgetary allocations (77%) supplemented by self-funded resources, most often contractual in nature. 76% of Budget allocations came from the MIRES budget, 19% from the ministry in charge of Defence while the balance of contributions came from other departments. 16% of resources, i.e. €3.3 bn, made available for government-funded R&D comes from contractual resources. In the first instance, this contractual activity was actually carried out in the public sector (€2bn) since public research organisations are all linked through a complex system for outsourcing research activity. Public administrative entities also entered into contracts with companies amounting to €692m and received €635m funding from abroad, including from the European Union. 34% of the contracts were carried out by EPICs, CEA and CNES being the key players in this respect. (*Graph 2*). And finally, public administrative entities' other self-funded resources finance 8% of their R&D activity. These come from intellectual property royalties, donations and legacies and provision of services amongst others. Their proportions are more significant in associations and EPICs (*Graph 02*).

In 2008, public funding received by companies for their internal R&D activities rose to €3.1bn (*Graph 03*). Public support for companies' R&D is allocated through two main channels: military research funds (€2bn and civilian contracts linked to major technological programmes such as aeronautics and ICT (€0.3m). The remaining public allocations consist of incentive funds granted by ministries and agencies, parafiscal taxes and to a lesser degree, funding by regional authorities. In 2008, 12% of companies' in-house R&D was financed through public funding, 22% through funding provided by other companies (in France or abroad) and 2% through international organisation or European Union funding; the remainder (64%) consisted of self-funding. Altogether, businesses in France (whether their research is done in-house or not) finance nearly 78% of business-funded GERD; the major part of this funding being provided by the company itself or by one of the group's French subsidiaries.

In 2006 in France, businesses within the national territory financed approximately 51% of GERD, far less than in Japan (78%), Germany (68% in 2007) and the United States (67%) (*Graph 04*). In the United Kingdom, they financed less than half of domestic expenditure on research (45%), given the importance of foreign funding.

Contractual resources refer to resources from a third party under contracts, agreements or grants, resource categories that require the performer to maintain a research programme, or build a given piece of equipment.
Funding from the National Agency (ANR) is classified in this category. Public funding of company R&D concerns direct payments made by public administrative entities. It does not take into account tax benefits (indirect expenditure) such as research tax credit (RTC) or "young innovative company" (YIC) status.

Sources: MESR-DGESIP/DGRI-SIES et MEN-MESR-DEPP.
Scope: All of France.

Funding for research and development activities

01 Nature and origin of public research funds in 2008 (millions of €)

All of France

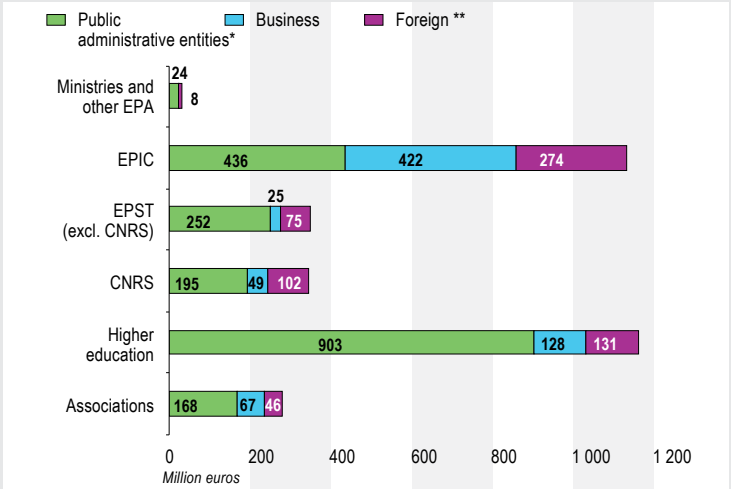
	Budgetary allo-cations in €m	Contractual resources in €m	Other self-funded resources in €m	Total in €m	2007-2008 Growth rate % of volume
State sector	**9,718**	**1,517**	**860**	**12,094**	**5.5%**
Civil	6,637	1,517	860	9,013	2.8%
EPST (excl. CNRS)	1,595	351	97	2,043	2.1%
EPIC	3,014	1,133	756	4,903	2,8%
EPA (excl. *Grandes écoles*)	212	30	6	248	- 2.4%
Ministerial departments	1,816	3		1,819	4.2%
Defence	3,081			3,081	14.2%
Higher education sector	**6,367**	**1,508**	**469**	**8,343**	**4.4%**
CNRS and institutes	2,312	347	224	2,882	- 2.0%
Grandes écoles not under MEN authority	143	92	8	244	- 6.7%
Universities and higher ed. inst.	3,911	1,070	237	5,218	8.9%
Associations sector	**87**	**281**	**327**	**695**	**9.5%**
Total government	**16,171**	**3,306**	**1,655**	**21,133**	**5.2%**

* Budgetary provisions are the funds itemised for institutions in the State budget. According to the methodology used, this concerns provisions actually spent.

Source: MESR-DGESIP/DGRI-SIES.

02 Origin and amount of contracts won by the main public research players in 2008

All of France

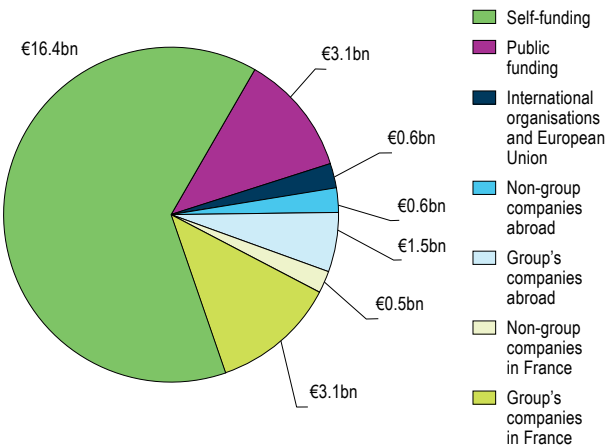


* State, higher education and non-profit organisations.
** Including international organisations.

Source: MESR-DGESIP/DGRI-SIES.

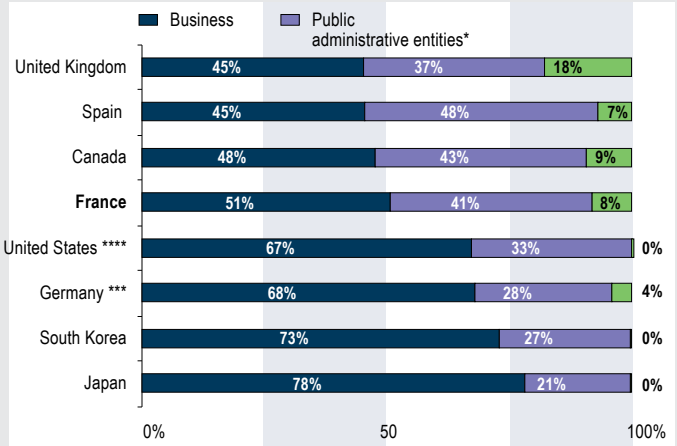
03 Funding for DIRDE in 2008 (billions of euros)

All of France



Source: MESR-DGESIP/DGRI-SIES.

04 Share of GERD funded by companies, public administrative entities and foreign funds (2008)



* State, higher education and non-profit organisations.
** Including international organisations.
*** 2007 data.
**** Excl.capital expenses, "abroad" is included in other categories.

Sources: MESR-DGESIP/DGRI-SIES and OCDE (PIST 2010-1).

25

The research tax credit (RTC) represented an average annual expenditure of €465m between 1994 and 2003. The extension of this scheme in 2004 increased the debt to €1.8bn for the year 2007 and to €4.3bn after the reform came into force in 2008.

This fiscal instrument is used by a growing number of countries to boost spending on company research and development (R&D). This is true of many OECD countries, but also of emerging countries. Moreover, countries already using the instrument are tending to make it more generous. This spread of tax incentives is due in part to the fact that such aid is adapted to the contemporary context of innovation, which is both demanding and constantly changing. Thus the RTC, which does not target any sector or technology solutions, is suited to the complexity of innovation processes and their multidisciplinary nature.

The expansion of tax measures also reflects the competition between OECD countries on the siting of R&D units. Competition among countries to attract company R&D activities as such therefore becomes an additional challenge on top of the traditional issues linked to private research incentives to stimulate company competitiveness. This issue is not new because the U.S. system of tax credit was adopted in 1981, when the U.S. wanted to encourage research in the face of the rising technological power of Japan. This concern has, however, grown stronger given the changes in the mobility of company R&D over the last twenty years: the process of open innovation is organised on a global scale.

In the early 2000s, France stood, with the U.S., in the category of countries providing packages of direct aid and significant tax incentives to large companies.
After a decline during the 1990s, the intensity of direct aid has remained relatively stable at around 0.15% of GDP (*Graph 01*). Similarly, aid for military R&D remains twice as large (0.10% of GDP) as aid to civil R&D (0.05%). The importance of aid provided under the RTC, however, increased from 2004, becoming greater than that of civilian aid by 2005 and greater than all direct aid in 2008 at 0.21% of GDP (RTC debt/GDP).

In total, since the mid-2000s, the strength of direct aid to R&D has been maintained while the RTC has increased dramatically. For 2008, the sum of direct subsidies and tax breaks for R&D spending in France rose to 0.37% of GDP, an amount substantially higher than in the U.S. or Canada (0.22% according OECD), two countries which also strongly support business R&D. The rate of public support in other OECD countries is indeed substantially lower.

The strengthening of the RTC has prompted a growing number of companies to request it, especially small firms (*Graph 02*). Firms with fewer than 250 employees represent 84% of RTC beneficiaries and two thirds of small independent companies alone (*Table 03*). Very small firms with fewer than 50 employees themselves represent the majority of RTC beneficiaries. Small and very small businesses also receive a share of the RTC higher than their share of reported expenditure. Such is the modus operandi of the RTC which has increased rates for new entrants, mostly SMEs, and a reduced rate of 5% for expenses beyond €100m (see explanatory note opposite).

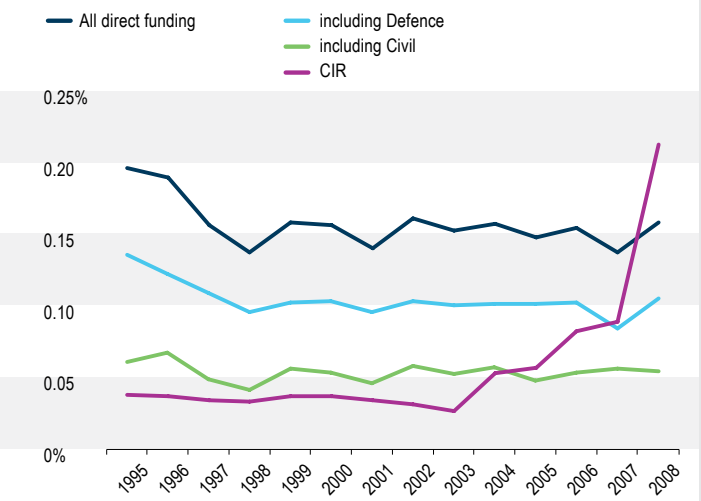
The research tax credit (RTC) is a tax incentive for research based on R&D company expenses. The tax credit is deducted from the tax payable by the company under the year the expenses were incurred. It is calculated on the basis of all company R&D expenses. This includes expenditure on human and material resources allocated to R&D within the company and outsourced research. Technological intelligence and certain expenses relating to patents and standardisation are also eligible.

Until 2007, the RTC included a volume equal to 10% of committed R&D expenses and an increase in share equal to 40% of additional expenses incurred (with a ceiling of €16m).
From 2008, this scheme was simplified and derestricted: credits of 30% on expenses up to €100m and 5% thereafter

Source: MESR-DGRI.
Scope: All of France.

01 Trends in public funding of company R&D in France (as a% of GDP)

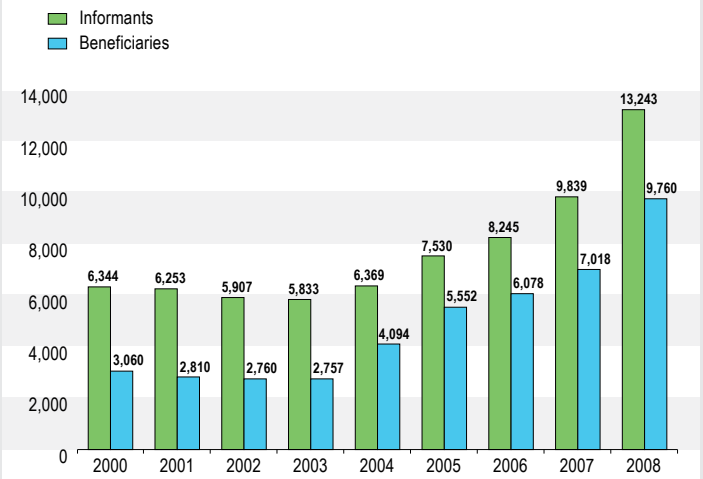
All of France



Sources: MESR-DGRI and MESR-DGSIP/DGRI-SIES.

02 Trends in the average number of students per class (2000-2008)

All of France



The number of beneficiaries is below that of informants because the fiscally integrated groups accumulate the RTC of their subsidiaries.

Source: MESR-DGRI-SETTAR (October 2010).

03 Distribution of eligible expenditure and RTC by size of beneficiary companies in 2008

	Beneficiary companies *			Declared expenditure			CIR			
	Number of companies	Breakdown by size %	Of which independents ** %	Amount in millions of euros	Proportion %	Of which independents ** %	Amount in millions of euros	Proportion%	Of which independents ** %	RTC/declared expenditure
1 to 9	3,087	31.6%	29.1%	466	3.0%	2.7%	182	4.2%	3.6%	39.1
10 to 49	3,118	31.9%	25.3%	1,294	8.3%	6.6%	454	10.6%	8.1%	35.1
50 to 249	1,963	20.1%	12.9%	1,767	11.4%	7.1%	568	13.2%	8.5%	32.2
Below 250	***8,168***	***83.7%***	***67.3%***	***3,527***	***22.7%***	***16.4%***	***1,205***	***28.0%***	***20.2%***	***34.2***
250 to 499	468	4.8%	2.1%	976	6.3%	3.4%	302	7.0%	3.9%	30.9
500 to 1,999	483	4.9%	1.5%	2,682	17.3%	4.4%	798	18.6%	4.9%	29.8
2,000 to 4,999	112	1.2%	0.2%	1,908	12.3%	0.8%	555	12.9%	0.9%	29.1
Over 5,000	75	0.8%	0.1%	6,159	39.7%	0.5%	1,335	31.1%	0.5%	21.7
Not supplied	454	4.7%	3.5%	268	1.7%	1.6%	102	2.4%	1.9%	38.1
Total	**9,760**	**100%**	**75%**	**15,520**	**100%**	**27%**	**4,297**	**100%**	**32%**	**28.0**

* The number of beneficiaries is below that of informants because the fiscally integrated groups also include the RTC of their subsidiaries. In this table, the numbers refer to beneficiaries, i.e. the sum of subsidiary numbers for the groups in fiscal terms.
** Independent companies: companies not part of a fiscally integrated group.

Source: MESR-DGRI-SETTAR (October 2010).

26

In 2008, 476,000 people were involved in an activity linked to research. Over the past five years, the number of researchers has risen more rapidly in companies (+29%) than in public administrative entities (8%). Women represent 31% of research staff.

In 2008, 476,000 people were involved in activities linked to research. They represented 388,300 full-time equivalents (FTE) showing a 12.2% increase in five years (*Table 01*). Between 2003 and 2008, the number of researchers increased rapidly, from 192,800 to 229,100 full-time researchers (an average increase of 3.5% per year). The increase in support staff was more limited with a 3.8% rise in 5 years (an average of 0.8% a year) Thus the proportion of researchers stood at 59% in 2008 compared to 56% in 2003, which was equivalent to a ratio of 0.80 support staff per researcher in 2003 compared to 0.69 in 2008.

In 2008, companies employed over FTE 130,000 researchers. Having risen by 29% since 2003, this number progressed faster than in public administrative entities where it reached 99,300 FTE (an increase of nearly 8% in five years). Since 2002, there have been more researchers in companies than in public administrative entities and in 2008, they represented 56.7% of all researchers.

In companies, five sectors of research constituted almost half (46%) of the research base: the "automotive industry", "Information technology and information services", "the aerospace Industry", "the pharmaceutical industry" and "communications equipment manufacturing" (*Graph 02*). Between 2003 and 2008, service industries, including "Information technology and information services" increased four times faster than industries.
Numbers in the public research sector also became highly concentrated: researchers numbered 46,100 in universities, 18,300 in CNRS and 7,600 in CEA.

The share of women among research staff was 31% in 2008. They constituted a smaller proportion of researchers (27%) than of support staff (38%). They were also less numerous in companies (24%) than in public administrative entities (40%).
In companies, the share of women among researchers has remained stable since 2000. It reached 20.3% in 2008.This average conceals disparities among research sectors (*Graph 03*): women are more numerous in pharmaceutical research (56%) and in chemical research (44%).
The public research sector employs more women than the private sector. Women here represent 35% of researchers and 50% of other staff. Among researchers, the number of women is growing faster than the number of men (an annual average of 2.0% compared to 0.8% between 2003 and 2008) but their proportion is evolving slowly (0.26 points on average).

Within the European Union, France occupies third place, behind Germany and the United Kingdom, in terms of full-time researchers.
At world level, China occupies first place, ahead of the European Union and the United States.
When the number of researchers is compared to the economically-active population, with 8.2 researchers per thousand economically active individuals, France ranks below Japan and the United States but above Germany, the United Kingdom and Spain (*Graph 04*). Several less populated countries are among the world leaders, in particular Finland and Sweden.

In the public sector, *the following are identified as Researchers: personnel holding a public service function of research directors, university professors, research fellows and lecturers, non-tenured staff recruited at a level equivalent to the above levels; personnel under private contracts (such as in EPICs), whose functions are equivalent to those enjoyed by the above officials, research engineers and equivalent bodies and the recipients of funding to conduct a PhD (funded doctorate); temporary teaching and research staff (ATER).*

In companies, *R&D researchers and engineers are scientists and engineers engaged in the conception or creation of new knowledge, products, processes, methods or new systems. All non-research staff contributing to the implementation of R&D projects are considered as support staff: technicians and assimilated staff carrying out scientific tasks under the supervision of researchers in addition to qualified or non-qualified workers, office staff and secretarial staff participating in the implementation of R&D projects or directly linked to them.*
The staff are distributed among one or more economic activity sectors benefiting from R&D work. These 32 research sectors are based on the revised French classification of economic activities (NAF 2).

Sources: MESR-DGESIP/DGRI-SIES and MEN-MESR-DEPP.
Scope: All of France.

01 Research and development full-time equivalent staff

All of France

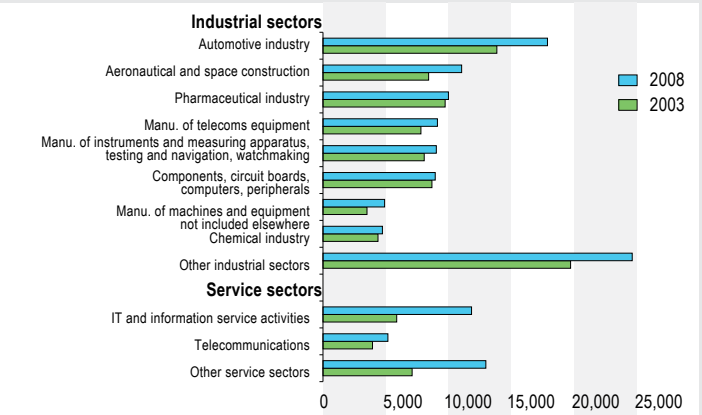
	2003	2004	2005	2006	2007	2008 (sd)
Research staff: researchers + support	**346,078**	**355,774**	**353,454**	**369,584**	**379,006**	**388,284**
Public administrative entities	**152,822**	**155,262**	**158,462**	**161,709**	**163,115**	**166,408**
State	*80,904*	*82,225*	*84,304*	*86,533*	*87,162*	*88,590*
*Higher education **	*65,702*	*66,743*	*67,856*	*69,044*	*70,161*	*72,197*
NPO	*6,216*	*6,294*	*6,302*	*6,131*	*5,792*	*5,621*
Business	**193,256**	**200,512**	**194,992**	**207,875**	**215,891**	**221,876**
Researchers	**192,790**	**202,377**	**202,507**	**210,591**	**221,851**	**229,129**
Public administrative entities	**92,144**	**93,626**	**95,669**	**97,070**	**97,274**	**99,305**
State	*41,275*	*42,182*	*43,739*	*44,206*	*44,317*	*45,719*
*Higher education **	*47,669*	*48,094*	*48,440*	*49,370*	*49,661*	*50,550*
NPO	*3,200*	*3,349*	*3,491*	*3,494*	*3,296*	*3,036*
Business	**100,646**	**108,752**	**106,837**	**113,521**	**124,577**	**129,824**
Support staff	**153,288**	**153,397**	**150,947**	**158,993**	**157,155**	**159,155**
Public administrative entities	**60,679**	**61,637**	**62,793**	**64,639**	**65,841**	**67,103**
State	*39,629*	*40,043*	*40,566*	*42,327*	*42,845*	*42,871*
*Higher education **	*18,033*	*18,649*	*19,416*	*19,674*	*20,500*	*21,647*
NPO	*3,016*	*2,945*	*2,811*	*2,637*	*2,496*	*2,585*
Business	**92,610**	**91,761**	**88,154**	**94,354**	**91,314**	**92,052**

Break in series. From 2006, companies employing less than 1 full-time equivalent researcher were included in the results.
(sd) semi-definitive data (excl. CNRS)

Source: MESR-DGESIP/DGRI-SIES.

02 Number of researchers per research branch in 2003 and 2006 in FTE

All of France

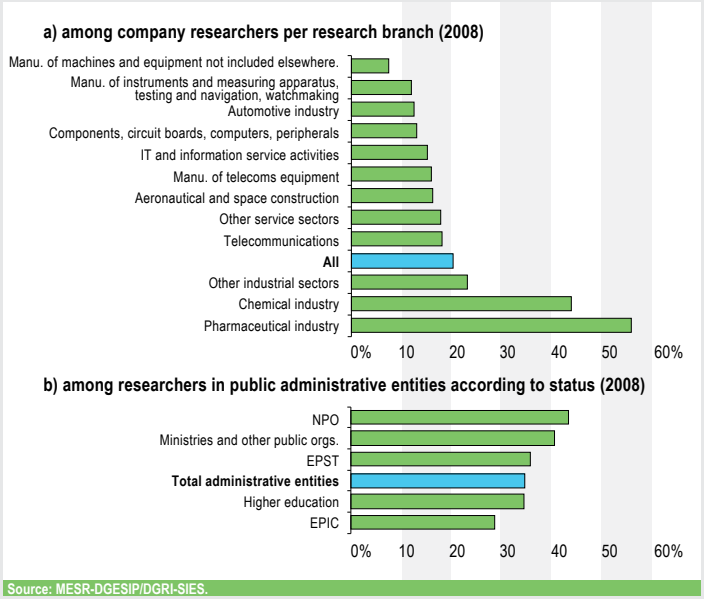


* Semi-definitive data
Note: the chart data show the numbers of staff involved in the 10 most important research sectors in terms of GERD. The remaining 22 sectors are grouped under the headings "other industries" and "other service industries", based on revised French classification of economic activities (NAF.2).

Source: MESR-DGESIP/DGRI-SIES.

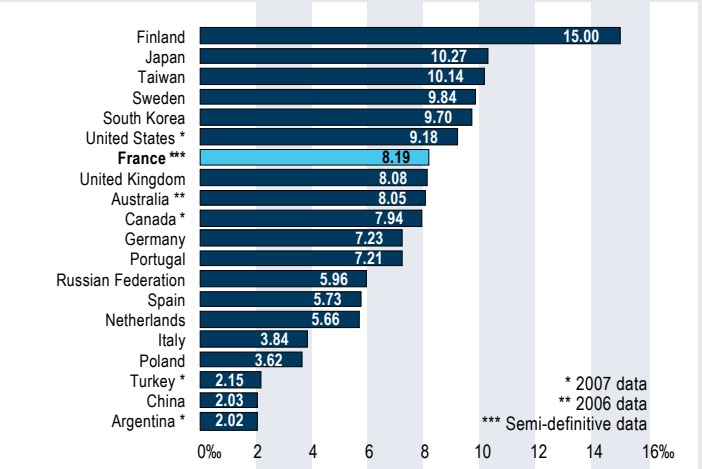
03 Proportion of women (individuals)

All of France



Source: MESR-DGESIP/DGRI-SIES.

04 R&D researchers in proportion of the economically-active population (per thousand) in 2008 (or latest available year)



Commentary: The 20 countries shown are those with the largest number of researchers in FTE.

Sources: OCDE (PIST 2010-1) and MESR-DGESIP/DGRI-SIES.

27

At the beginning of 2009, nearly 66,500 students were enrolled in university doctoral programmes and 11,400 doctorates were awarded. Nearly half the students enrolled for the first time on doctoral courses had been on a Master's course the previous year.

Research studies are carried out in 290 doctoral schools located around France. Their goal is to train specialists and researchers at a very high level, in the course of the three-year thesis preparation. The spread of post-graduate schools, initiated in 2000, is designed to offer transparent and attractive training provision at European and international levels. Following on from a new reform carried out in France within the framework for European higher education development (August 2006), the scientific value of education delivered at PhD level is guaranteed by an accreditation procedure which is an integral part of the institutions' four-year contract. The scientific assessment of doctoral programmes is now conducted by AERES (*Agence d'évaluation de la recherche et de l'enseignement supérieur*: Evaluation agency for research and higher education).

In early 2009, nearly 66,500 students, including 26% new enrolees, were enrolled in doctoral programmes in French public universities. Their numbers have increased by 9% compared to 2000. Between 2000 and 2005, the number of doctoral students increased significantly (+15%) stabilising in 2006. Since 2007, numbers have again decreased (*Graph 01*).

In 2009, the decline was 2% compared to 2008. Enrolment has declined significantly in law, economics and economic and social administration (- 4%), more moderately in arts, languages and humanities (- 3%) and remained stable in science, the discipline that witnessed the largest increase in the number of PhD students between 2000 and 2009.

The distribution of students by discipline has been similar since September 2000 (*Graph 02*). In 2009, the proportion of incoming students in science (43%) was higher than those enrolled in arts, languages and social sciences (35%) or in law, economics and economic and social administration (19%).

In 2009, the majority of new PhD candidates enrolled in university (or equivalent) courses the previous year (51% of those registered) were in the second year of a research Master's or DEA (*diplôme d'études approfondies*: advanced research-oriented graduate degree) during 2005 (29%). In addition, 3% were enrolled in a university engineering sector. The 49% not enrolled at the university in the previous year include students from non-university engineering schools (4%) and all those returning to education after a break at least one year or who graduated abroad.

At the beginning of 2009, 3100 students were preparing a PhD in a non-university engineering school, mostly in science, where 90% were enrolled.

11,400 doctorates were awarded in 2008 in French public universities.Their growth (44% since 2000), which had slowed in the previous two years, was still faster than that of doctoral students (*Graph 01*). In 2008, the number of graduates in all subjects increased compared to the previous year, slightly more in sciences (4%) than in in arts, languages and social sciences (3%) and law, economics and economic and social administration (2%), the discipline that has experienced the largest increase in the number of PhDs since 2000 (50%).

The breakdown of doctorates awarded by discipline did not change during the period. The proportion of science graduates (59% in 2008), greater than that of doctoral students in this discipline, is also the strongest. A quarter of graduates are in arts, languages, humanities and only 13% in law, economics and economic and social administration (*Graph 02*).

In 2008, 330 doctorates were also awarded in non-university engineering schools, mainly in sciences.

In September 2009, 69% of the students enrolled in the first year of doctoral courses, and whose financial situation is known, received funding for their thesis (*Table 04*): mainly from public funds (MoR, research organisations or regions) or research-related partnerships (CIFRE). In September 2008, this percentage was 66%.

Graphs 01, 02 and Table 03: *the data relate to students enrolled in doctoral theses and graduates in French universities - or in similar establishments - and in non-university engineering schools identified by the SMIS information system.*
However, theses which are part of the preparation for the state diplomas Doctor of Medicine, Doctor of Pharmacy and Doctor of Dental Surgery are not taken into account. Sciences include STAPS
In order to identify the education pursued in the previous year by graduate students enrolled in 2009, a cohort was set up. The non-identified students were those who had not enrolled in a university or equivalent or non-university engineering school the previous year.

Table 04: *Data are available for students enrolled in the 1st year of doctoral thesis in schools listed by the SIREDO information system (excluding medicine, dentistry and pharmacy).*

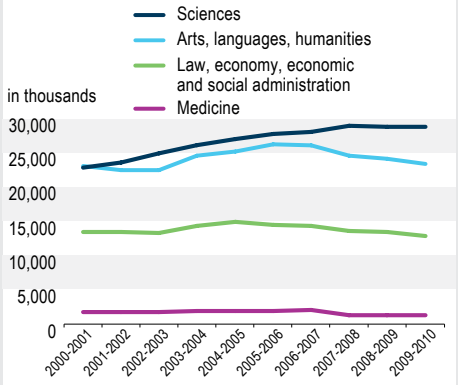
Source: MESR-DGESIP/DGRI-SIES.
Scope: All of France.

Doctoral students enrolled in university 27

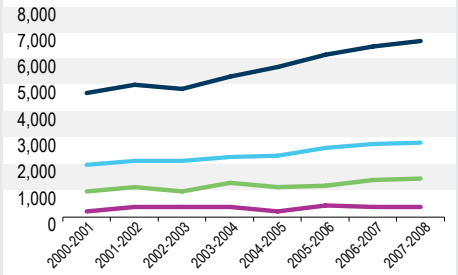
01 Trends by discipline

All of France

PhDs candidates enrolled between 2000-2001 and 2009-2010



PhDs awarded between 2000-2001 and 2007-2008

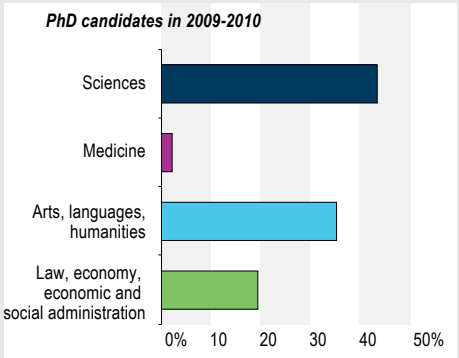


Source: MESR-DGESIP/DGRI-SIES.

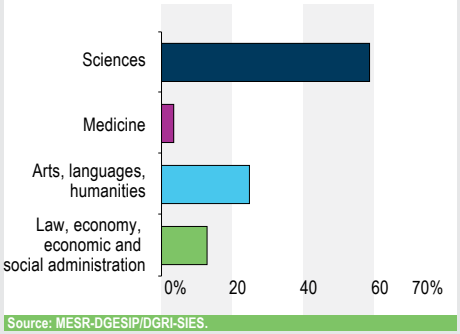
02 Breakdown by discipline

All of France

PhD candidates in 2009-2010



PhDs awarded in 2007-2008



Source: MESR-DGESIP/DGRI-SIES.

03 Training courses taken in 2008-2009. by doctoral students enrolled in 2009 (%)

All of France

Situation in 2008-2009		2009-2010
Enrolled at university*	**51%**	
Master's	44%	PhDs
University engineering courses	3%	(students of
*Others***	4%	1st year)
Not enrolled at university*	**49%**	
Of which engineering schools	4%	
All	**100%**	

* University or equivalent institution.
** DU, Medical diplomas, preparation for teaching etc, etc.

Source: MESR-DGESIP/DGRI-SIES.

04a Funding of PhD candidates enrolled in the first year of thesis as observed at start of 2009 and 2010 academic years

	Total PhD candidates enrolled in first thesis year	Total PhD candidates with known financial status (thesis funded or working)	Total PhD candidates with thesis funding (excluding working PhD candidates)	% funded PhD candidates compared to total candidates	% funded PhD candidates compared to total candidates whose financial situation is known	Total PhD candidates working and without thesis funding
Total at start of 2009 academic yr.	18,509	16,868	11,131	60.1%	66.0%	3,153
Total at start of 2010 academic yr.	19,769	18,564	12,761	64.6%	68.7%	3,098

Source: Source: MESR-DGES (2008 and 2009 SIREDO survey on doctoral schools).

04b Breakdown of main types of funding for the academic years 2008-2009 and 2009-2010 (as a % compared to the total of doctoral students receiving thesis fundng)

	MESR research grants	Industrial Agreement for Training through Research (CIFRE)	Funding from a research organisation	Regional authority grants	Funding for foreign PhD candidates	Other funding
Total at start of 2009 academic yr.	35%	10%	11%	10%	15%	20%
Total at start of 2010 academic yr.	32%	9%	11%	9%	16%	24%

Source: Source: MESR-DGES (2008 and 2009 SIREDO survey on doctoral schools).

28

Over 137,100 researchers are engaged in business R&D. The population is young and predominantly male. In 2007, their average age was under 40.More than half these researchers were trained in engineering schools.
The women were on average younger and more qualified than the men.

In France in 2007, over 137,100 researchers (individuals) were engaged in business R&D activity.The population of in-company researchers is young and predominantly male. On average, four out of five researchers are men. However, the younger generations are characterised by greater feminisation. Thus, over a quarter of researchers under age 30 are women (*Graph 01*). Contrary to the administrative sector, the population of in-company researchers decreases rapidly after age 50: 72% are under 45 and 16% are 50 and older. By comparison, among the general population of company employees, 66% are under 45 and 21% over 50. These statistics fuel the hypothesis that a large majority of business researchers conduct only the first part of their careers in private research. However, the age of researchers varies across the research sectors in which they work: in engineering and computer science, half the researchers are under 34 while in agriculture, the average age is over 42.

Over half of business researchers (52.5%) come from engineering schools (*Graph 02*). PhDs constitute 13.2% of researchers and almost one third of them have degrees in medicine. Moreover, among the doctors outside health-related disciplines, 22% have completed their doctorate from a school of engineering, which reinforces the weight of this sector. In the research area of pharmacy, more than half have PhDs while in automobile and aircraft construction the proportion of PhDs is 6% and 7% respectively A unique feature of business research is that the proportion of researchers whose highest degree is below Bachelor's degree level (12%). These individuals are employed as researchers thanks to their professional experience or continuing education, but are not validated by a diploma.

The percentage of women, which is 20.8% for all business researchers, varies widely depending on their training (*Graph 03*). Among doctors in the field of health, women are equal with men. They represent nearly 30% of PhDs outside the health sector and of university graduates (Masters, DEA, DESS). Courses in engineering school and those below Bachelor's degree level are the least feminised.

The percentage of women, which is 20.8% for all business researchers, varies widely depending on their training (*Graph 03*). Among doctors in the field of health, women are equal with men. They represent nearly 30% of PhDs outside the health sector and of university graduates (Masters, DEA, DESS). Courses in engineering school and those below Bachelor's degree level are the least feminised.

Male business researchers focus their research disciplines in three areas: "Engineering 1" (41%), "Engineering 2" (28%) and "Mathematics/software/physics" (15%) (*Graph 04*). The research disciplines exercised by women are much more varied than those of men. In addition to "engineering" and "mathematics/software/physics" which occupy 58% of them (as against 84% of men), "biological and medical sciences" and "chemistry" play an important role in female research activity

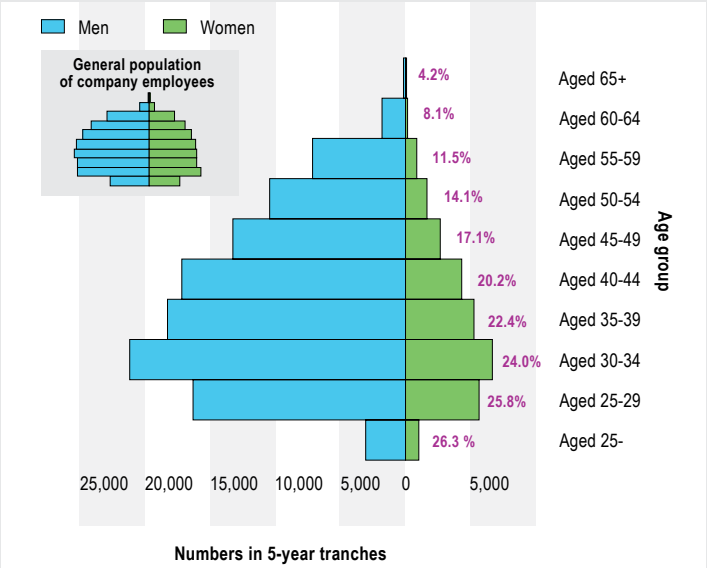
In 2007, 5% of industrial researchers working in France were of foreign nationality. Over half of them are from European Union countries.

*The 2007 data presented are definitive and derive from the **special investigation into scientific and engineering research and development in companies in 2007**. This survey is a component of the biennial annual survey of resources devoted to research and development companies. The special survey of researchers and engineers in research and development business accounts only for **natural persons.***

***Researchers and engineers in business R&D,** scientists and engineers are engaged in the conception or creation of new knowledge, products, processes, methods or new systems (including post-graduate students paid by the company as recipients of a CIFRE [Convention industrielle de formation par la recherché:- Industrial Agreement for Training through Research] agreement for example), and high-level personnel with responsibilities for managing teams of researchers.*
***"Engineering 1"** includes: electrical, electronics, computer science, signal processing, photonics, optronics.*
***"Engineering 2"** includes civil, mechanical, materials engineering, acoustics, fluid mechanics, thermodynamics, energetics, process engineering.*

Source: MESR-DGESIP/DGRI-SIES.
Scope: All of France.

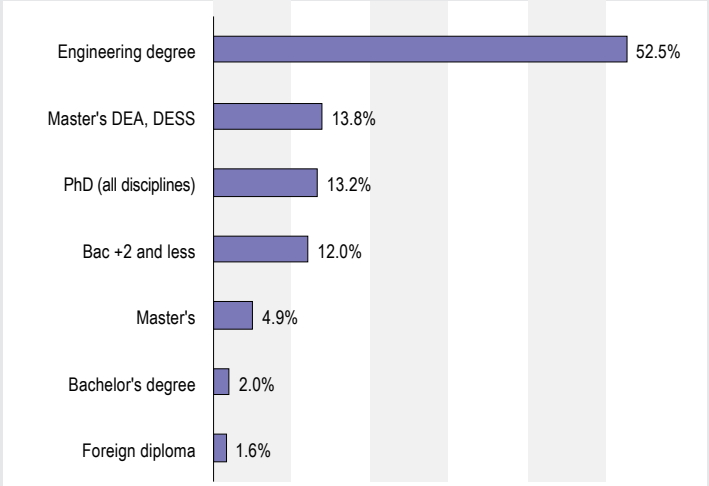
01 In-company researchers in 2007 (definitive figures): Age pyramid



Pink text % of women in the total staff for this age group

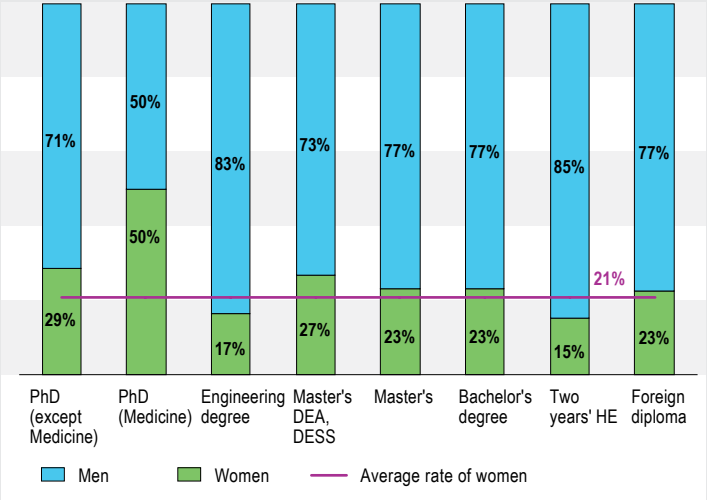
Source: MESR-DGESIP/DGRI-SIES.

02 Researchers in companies in 2007 (definitive figures): breakdown by highest qualification



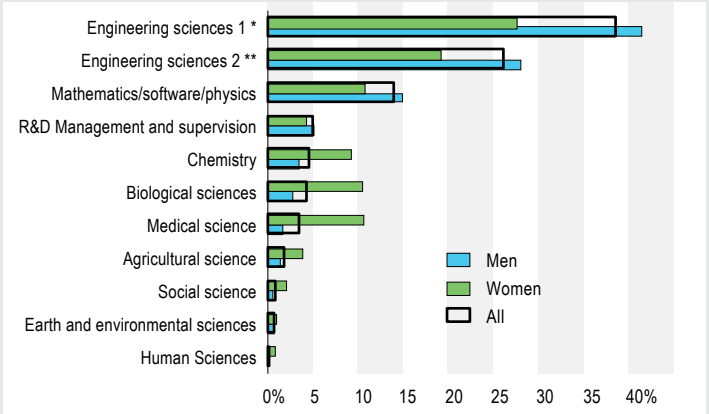
Source: MESR-DGESIP/DGRI-SIES.

03 Researchers in companies in 2007 (definitive figures): proportion of women according to highest qualification



Source: MESR-DGESIP/DGRI-SIES.

04 Researchers in companies in 2007 (definitive figures): breakdown by research discipline and gender



* Electrical, electronics, computer science, signal processing, photonics, optronics.
** Civil and mechanical engineering, materials engineering, acoustics, fluid environment engineering, thermodynamics, energetics, process engineering.

Source: MESR-DGESIP/DGRI-SIES.

29

The status of Young Innovative Company (YIC) was established by the Finance Act of 2004 to enable small and medium enterprises engaged in research to face the considerable challenges of their early years.
In 2008, the research expenditure of YICs was €500 million, mostly concentrated in service industries.

Young Innovative Companies (YIC) are small businesses in terms of their workforce. In 2008, the average number of employees in a YIC was 10 with 90% of YICs having fewer than 20 employees. In 2008, firms conducting research and development (R&D) on French territory employed an average of 277 people (*Table 01*).

YICs were actively involved in research conducted in France by small and medium enterprises. In 2008, internal YIC expenditure on R&D was estimated at €500 million, which constitutes over 10% of the research spending of firms with fewer than 250 employees. Moreover, two thirds of YIC research is conducted in businesses with fewer than 20 employees. In 2008, each YIC invested an average of €400,000 in research (*Table 01*). This amount is twice larger than the average amount spent by companies with fewer than 20 employees conducting R&D due to the higher average numbers of R&D staff in YICs than in companies with fewer than 20 employees: 5.5 as against 3.0 full-time equivalent (FTE).

YICs often cooperate with other research actors. In fact, nearly 42% of them outsource research to public agencies or firms. This proportion is only 33% if we observe all firms with fewer than 20 employees.
In 2008, public funding (excluding indirect subsidies such as exemption from social security contributions or the research tax credit) received by the YICs for research amounted to €121m. Like the other small and medium enterprises, the bulk of funding for YIC derives from incentive credits from ministries and agencies. These funds represent over 85% of all public funds received by YICs (*Table 02*). In contrast, YICs receive very little of the funding related to defence and large technology programmes (1.5% of public funds).

YICs in the first four research sectors represent 70% of GERD (*Graph 03*). Their expenses are more concentrated than in firms with fewer than 20 employees and companies with 20-249 employees, where the first four research sectors represent 57% and 37% of GERD respectively. Three sectors of service research receive more than half of YIC investment. These are "professional, scientific and technical", "computer activities and information services" and "publishing, broadcasting and distribution." With 14% of the research, the pharmaceutical industry is the main branch of YIC Industrial Research.

The Finance Act for 2004 established the status of young innovative companies (YIC). To qualify, companies must meet five conditions:
- Being an SME in the European Union sense: employing fewer than 250 people and with a turnover of less than €50 million or total assets below €40 million;
- Be less than eight years old;
- Have a minimum volume of research spending: at least 15% of tax deductible expenses, at the close of each fiscal year;
- Be independent;
- Be truly new;

YIC status confers benefits:
- Exemptions from payroll taxes for researchers, technicians and project managers in R&D.
- Total exemption from income tax for three years, followed by a partial exemption of 50% for two years.
- Total exemption of fixed annual tax (IFA), throughout the period for which it retains the status of YIC.

*The **research branch** is the branch of economic activity recipient of R&D, described here for 32 posts based on the 2008 revised classification of French activities (NAF 2)*
The "Professional, scientific and technical services" research sector consists primarily of research and development and engineering services.

In this file, the YICs are lcompanies performing R&D on French territory.

Sources: MESR-DGESIP/DGRI-SIES and MEN-MESR-DEPP.
Scope: All of France.

01 Characteristics of companies by category in 2008 (1)

All of France

	YIC	Number of employees at 31 December 2008			Total companies
		Fewer than 20	20 to 249	250 or more	
Average workforce	9.6	7.8	79.8	1,822.4	276.5
Average GERD Amount in millions of euros	0.4	0.2	0.8	13.7	2.2
Average EERD * Amount in millions of euros	0.1	0.1	0.2	3.9	0.6
Average number of researchers (full-time)	3.7	1.8	5.3	62.3	11.2
Average number of R&D staff (full-time)	5.5	3.0	9.0	106.5	19.2
Average intensity of R&D **	41.8	31.3	11.6	8.8	19.6
Share of joint exporting companies *(%)	0.9%	0.2%	6.8%	37.5%	8.0%
Share of companies with an EERD > 0- (%)	42.3%	32.9%	37.5%	56.5%	38.0%

* EERD: External Expenditure on Research and Development. ** Ratio average (GERD/numbers).

SOURCES: MESR-DGESIP/DGRI-SIES AND MEN-MESR-DEPP.

02 Public funding received in 2008 by category of company (1)

All of France

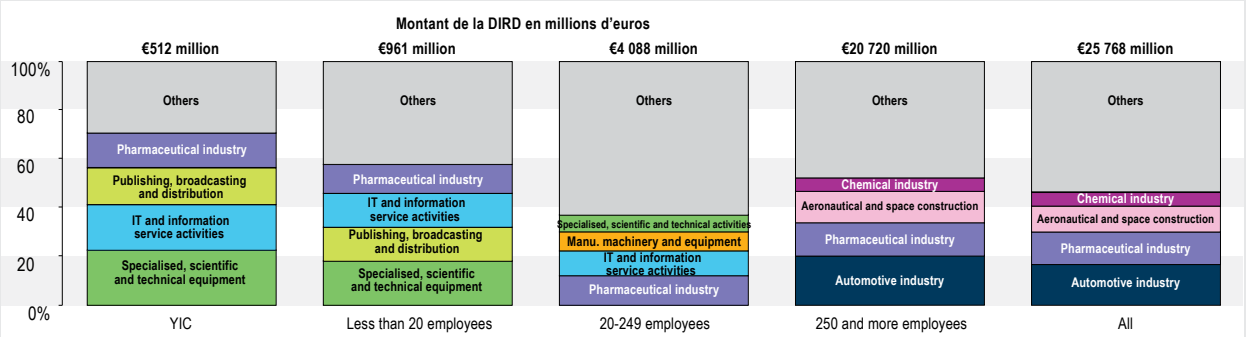
	Amount of public funding received	Share of public funding received under GERD	Nature of public funding received			
			Defence	Large technological programmes	Incentive credits	Other civilian funding**
	In €m	as a %	As a% of the total of each category of companies			
YIC	121	23.6%	1.4%	0.1%	85.5%	13.0%
Companies with fewer than 20 employees	227	23.6%	6.9%	0.0%	81.0%	12.1%
Companies with 20-249 employees	302	7.4%	9.0%	2.9%	72.7%	15.4%
Companies with 250 employees or more	2,573	12.4%	77.9%	11.5%	8.9%	1.7%
Total companies	3,102	12.0%	66.0%	9.8%	20.4%	3.8%
Amount of public funding * spent on all companies (in €millions)	**3,102**		**2,048**	**305**	**631**	**117**

€m: million euros
* Indirect aid received by companies such as exemption from payroll taxes or research tax credits are not included
** Funding from regional government and associations

SOURCES: MESR-DGESIP/DGRI-SIES AND MEN-MESR-DEPP.

03 Breakdown of the main GERD research sectors in companies by category in 2008 (1)

All of France



Sources: MESR-DGESIP/DGRI-SIES and MEN-MESR-DEPP.

(1) Scope of companies conducting R&D activity in France.

30

In France, gross domestic expenditure on research and development (GERD) in biotechnology stood at €2.3bn in 2008. This activity is conducted primarily in companies of fewer than 50 employees. Pharmacy is the research sector that attracts more than 80% of R&D expenditure in biotechnology.

In 2008, in France, 1,100 firms reported conducting at least part of their research and development in biotechnology (*Table 01*). These companies employ over 210,000 people and spend €2.3bn on research. In general, they were smaller than most companies engaged in R&D activities (200 employees compared to 260) and dedicated nearly 72% of their R&D expenditure to biotechnology. Companies specialising in biotechnology devote almost all of their expenses (99%) to biotechnology.

En 2008, expenditure on biotechnology constituted about 9% of business expenditure on research and development (*Graph 02*). The proportion of biotechnology R&D remained stable from 2006 after nearly doubling over the period 2000-2006, rising from 5% to 9%.
The share of firms investing in biotechnology among all firms conducting R&D was 9% in 2008. Since 2000, this share has changed little and remains around 10%.

In 2008, the pharmaceutical industry attracted 81% of R&D in biotechnology although it represents only 23% of companies conducting R&D in biotechnology (*Graph 03*). Conversely, professional, scientific and technical activities, which attract more companies active in biotechnology (27%), represent only 5% of biotechnology R&D.
The two sectors that relate to the agri-food sector (agriculture, forestry, fishing and manufacturing of food, beverages and tobacco products) account for 16% of companies active in biotechnology, but only 6% of expenditure. As for the chemical industry, it comprises 12% of companies active in biotechnology and 4% of biotechnology R&D.

In France, biotechnology research is conducted mainly in small companies. In 2008, 61% of specialist biotech companies and 53% of companies active in biotechnology employed fewer than 20 employees (*Graph 04*). By comparison, the share of firms with fewer than 20 employees among companies conducting R&D is around 42%.
In companies with fewer than 50 employees, the differences are quite pronounced. Thus, 79% of specialist biotech companies employ fewer than 50 employees as against 61% for all firms conducting R&D. For companies active in biotechnology, this proportion rises to 72%.
The intensity of R&D is therefore significantly higher in companies active in biotechnology: €36,000 per employee against €20,000 for all companies in R&D.

National data are drawn from the survey on resources devoted to R&D in companies enterprises, conducted annually among 11,000 businesses. Since 2000, the survey has asked companies about the share (%) of domestic expenditure in R&D devoted to biotechnology.
*The **research sector** is the sector of economic activity benefiting from R&D and is organised here into 32 categories based on the NAF – the revised French classification of economic activities).*
*The **"Professional, scientific and technical services"** research sector consists primarily of research and development and engineering services.*
*According to the OECD definition, **biotechnology** is "the application of science and technology to living organisms as well as parts, products and models thereof, in order to alter living or non-living materials for the production of knowledge, goods and services".*

***Specialist Biotech companies** are companies that spend more than 75% of their R&D on biotechnology research.*
***Companies active in biotechnology** are companies dedicating a significant part of their R&D expenditure to biotechnological research.*

***Gross domestic expenditure on research and development** (GERD) refers to R&D conducted on national territory (home, overseas departments and overseas communities) irrespective of the funding source.*

Source: MESR-DGESIP/DGRI-SIES
Scope: All of France.

01 Characteristics of biotechnology R&D activity in companies

All of France

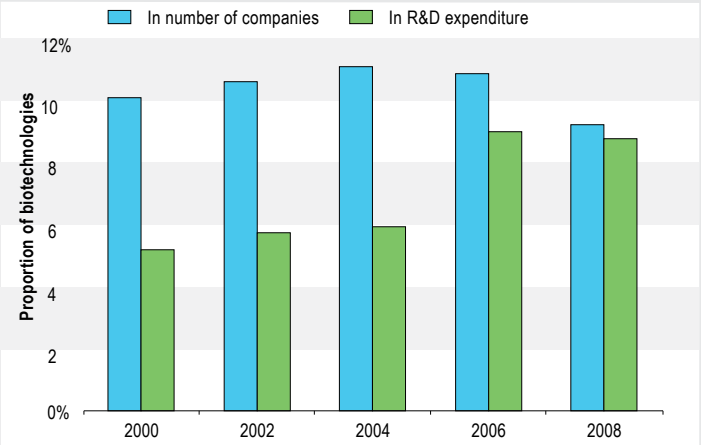
Year 2008	Companies with an in-house R&D activity: Total companies	Companies conducting R&D - or active - in biotechnology *	Companies specialising in biotechnology **
Number of companies	**11,575**	**1,067**	**676**
Total			
Total	3,200,733	401,460	46,303
Average (per company)	277	376	69
GERD			
Total (in €k)	25,768,414	3,812,447	2,018,517
Average (per company in €k	2 226	3,572	2,987
Average R&D intensity** (in €k)	20	36	41
GERD dedicated to biotechnologies			
Total (in €k)	2,256,316	2,256,316	2,010,236
Average (per company in €k	195	2,114	2,975
Proportion of individual GERD dedicated to biotechnologies (%)	7%	72%	99%

* Companies dedicating more than 0% of their GERD to biotechnologies.
** Companies dedicating more than 75% of their GERD to biotechnologies.
(1) Ratio average (GERD/numbers).
(2) Ratio average (GERD in biotechnologies/total GERD).

Source: MESR-DGESIP/DGRI-SIES.

02 Trends in share of biotechnologies in R&D activities

All of France

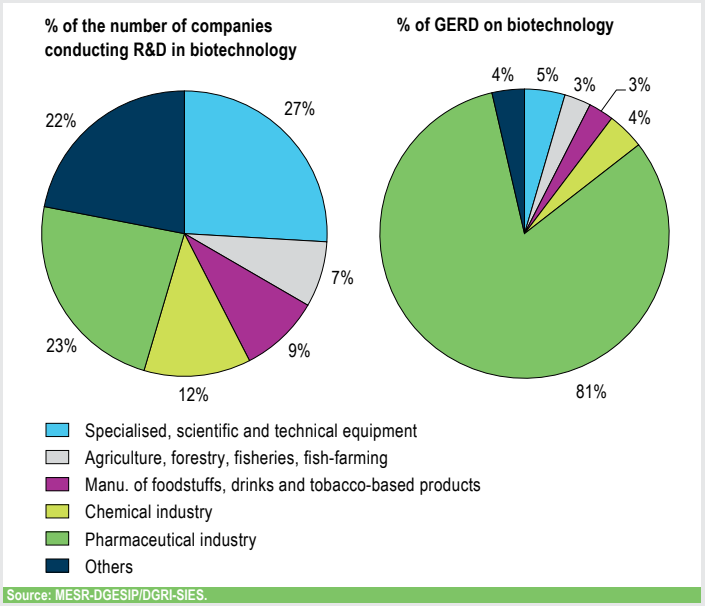


Interpretation: in 2008, companies performing biotechnology research represented 9% of all companies performing R&D. Their internal R&D expenditure on biotechnology represents 9% of company GERD

Source: MESR-DGESIP/DGRI-SIES.

03 Breakdown by research sector benefitting from business-funded biotechnology R&D in 2008

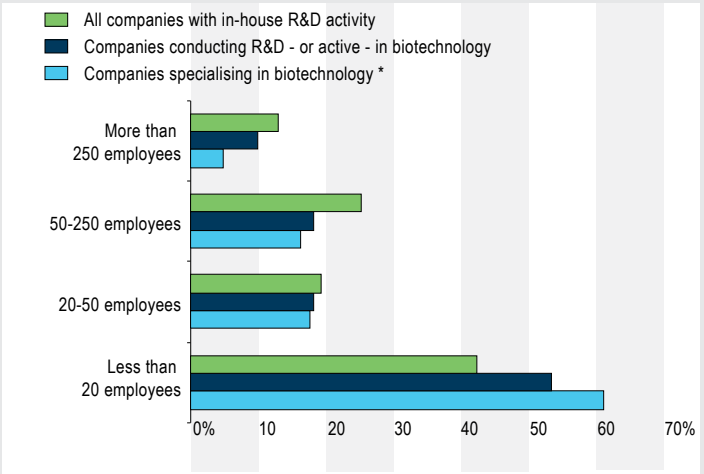
All of France



Source: MESR-DGESIP/DGRI-SIES.

04 Distribution of companies per number of employees in 2008

All of France



* Companies dedicating more than 75% of their GERD to biotechnologies.

Source: MESR-DGESIP/DGRI-SIES.

31

In 2008, over half of businesses with an internal R&D activity devoted some of their research spending to software, new materials or nanotechnology The three fields do not receive equal investment from all research sectors.

In 2008, in France, over half of businesses with an internal R&D activity devoted some of their research spending to software, new materials or nanotechnology (*Table 01*). These companies employ over 2.1 million employees. Companies active in at least one of these three areas of research have more employees on average (350 employees) than all companies with an R&D activity (290 employees).

Software development accounts for €4bn and is the primary field in terms of R&D expenditure. New materials represent an R&D expenditure of €1.6bn against just over €0.5bn euros for nanotechnologies. Nanotechnology research still concerns relatively few companies: in 2008, slightly over 3% of firms carrying out R&D on the French territory were active in this field. In companies specialising in the field of nanotechnology, this proportion is less than 1%. In contrast, software development mobilises a large number of companies: 37% of enterprises with internal R&D activity invested in this area in 2008. Research into new materials involves one company in five.

Software development research is carried out in small firms (*Graph 02*). In 2008, 54% of companies in software development employed fewer than 20 employees as against 44% for companies active in nanotechnology and 28% for those who are active in new materials. Regarding the proportion of businesses with fewer than 50 employees, the differences are equally clear: nearly three-quarters of firms active in software development have fewer than 50 employees while this proportion drops to 59% for companies active in nanotechnology and 47% for those who are active in new materials.

The three fields do not receive equal investment from all research sectors. In 2008, nanotechnology research mainly focused on research into "components, circuit boards, computers and peripheral equipment. At €0.4bn, the industry attracts 68% of the amount invested in nanotechnology (*Graph 03*). Software development and the field of new materials are much less specialised. For the former, the first four sectors comprised 57% of R&D in this field. The order descends as follows: "computer operations and information services" (€0.8bn), "publishing, broadcasting and distribution" and "manufacturing of communications equipment", each accounting for €0.5 billion, and finally "manufacture of instruments and measuring devices" (€0.4bn). As for the second, the first four research branches engaged in R&D in this area represent 45% of expenditure across all sectors.

*The **research sector** is the sector of economic activity recipient of R&D, described here in 32 posts based on the revised classification of French activities in 2 (Rev.2 NAF).*
*In this revised classification of French activities, **computer services** are divided into two parts: the first concerns computer operations and information services and the other refers to components, circuit boards, computers and peripheral equipment.*

*A **research area** is a cross-cutting research activity which can be conducted across several research sectors. When a company invests in R&D, the investments it makes may incorporate several areas of research. In this case, investments are counted in each research area concerned.*

***Software Development:** mainly refers to computer simulations for research.*

***New materials:** new materials for the market or for the company.*

***Nanotechnologies:** all technologies for manipulating, studying or using very small structures and systems (less than 100 nanometers).*

***Gross domestic expenditure on research and development (GERD)** refers to R&D performed on national territory (home, overseas departments and overseas communities) whatever the source of funds.*

Source: MESR-DGESIP/DGRI-SIES.
Scope: All of France.

01 Characteristics of company R&D activity in three research areas in 2008

All of France

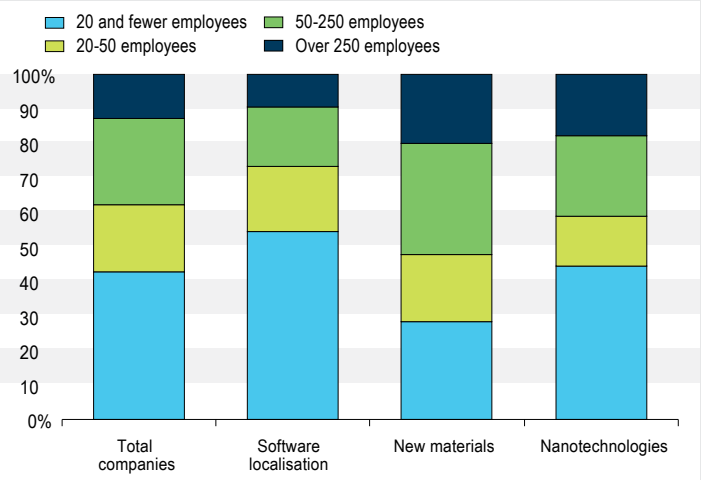
	Companies with an in-house R&D activity in:							
		• Software localisation		• New materials		• Nanotechnologies		Companies active * in one of the three areas
	Total companies	Active companies *	Specialist companies **	Active companies *	Specialist companies **	Active companies *	Specialist companies **	
Number of companies	**11,575**	**4,289**	**2,625**	**2,318**	**980**	**382**	**65**	**6,120**
Workforce at 31/12/2008								
Total	3,200,733	1,579,527	194,539	1,301,755	165,084	109,436	5,459	2,148,608
Average (per company)	277	368	74	562	168	286	85	351
GERD								
Total (in €k)	25,768,414	9,490,830	2,699,990	7,012,781	780,587	2,526,482	212,983	13,390,992
Average (per company)	2,226	2,213	1,029	3,025	797	6,609	3,300	2,188
GERD devoted to R&D								
Total (in €k)	6,190,587	4,039,501	2,648,862	1,606,744	747,725	544,342	199,887	***
Average (per company)	535	942	1,009	693	763	1,424	3,097	***

* Companies active in a research area refers to those who devote more than 0% of their GERD to this research.
** Companies specialising in a research area refers to those who devote more than 75% of their GERD to this research.
*** R&D investments can apply to several fields. The expenditure associated with these three areas is not equal to the sum of GERD devoted to each area.

Source: MESR-DGESIP/DGRI-SIES.

02 Breakdown of companies active* in a research field by workforce numbers in 2008

All of France

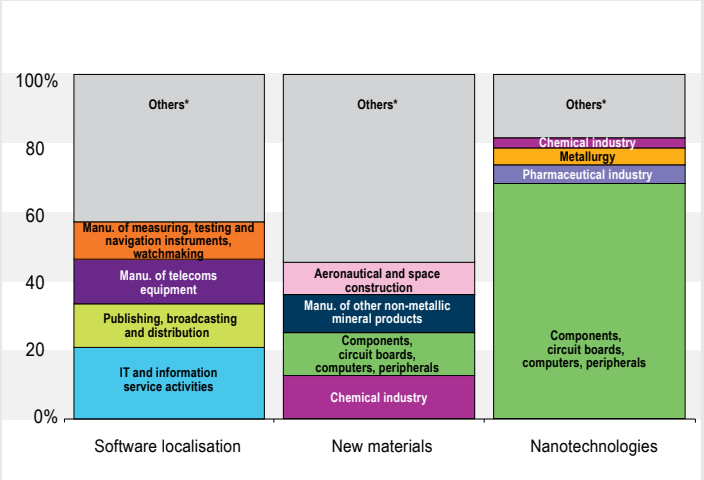


* Companies active in a research area are those who devote more than 0% of their GERD to this research.
Interpretation: 55% of companies active in software development employ fewer than 20 employees.

Source: MESR-DGESIP/DGRI-SIES.

03 R&D expenses of companies in the three areas divided into research sectors in 2008

All of France



* Others: expenditure is detailed according to a classification dividing the sector into 32 branches. The first four branches in terms of R&D expenditure are represented for each of the fields.
Interpretation: In 2008, 20% of the investments carried out in software development are conducted in the research area of computer operations and information services.

Source: MESR-DGESIP/DGRI-SIES.

32

In 2008, environment-related R & D expenditure can be valued at €4.1bn. One tenth of R & D conducted in the country is therefore, directly or indirectly, devoted to issues related to the environment.
Until the early 2000s, it was the government that carried the bulk of the expense. In 2008, contributions from companies reached 40%.

Environment-related R&D lies at the crossroads of multiple domains from a cross-cutting perspective, as a large number of actions can have a positive effect on the environment without defining the protection of the environment as a primary objective. It therefore also encompasses research on natural resource management, rational use of energy, renewable materials, biodiversity etc. On a more general level, the environment concerns virtually all research areas.
However, the European system of measuring environmental R & D, used for international comparisons, refers to a reduced number of activities. The data presented here are therefore not comparable to those obtained following the European methodology for detailing environmental spending.
In France, companies report the share of their business devoted to environmental protection. Their assessment of the environmental component in their R & D activity can be subjective and cover areas larger than those generally identified under environmental expenditure.
For the public sector, evaluation of expenditure includes three areas of research on specific targets (see *descriptive* table in appendix on page 84).
In 2008, environment-related public and private sector R&D can be valued at €4.1bn.

Research spending on the environment has long depended mainly on public administration. Its share of expenditure peaked in 2000 at over 81%. The gap between private and public has gradually diminished, and since 2004, companies have accounted for nearly 40% of expenditure (*Graph 01*).

In the business sector, at €1.6bn, the environment represented 6.4% of total GERD in 2008. Five research areas account for 72% of environment-related R&D expenditure while they contribute to 35% of Business-funded GERD. The primary research sector, the automotive industry, ranked first in volume of environment-related R&D with €793m and 2nd in the share of business-funded GERD devoted to the environment (18%) after the "energy" sector (22%) (*Graph 02*). Companies active in the "management of water and waste" and "production and distribution of gas and electricity" dedicated €90m and €64m to the environment, 83% and 23% respectively of their research expenditure.

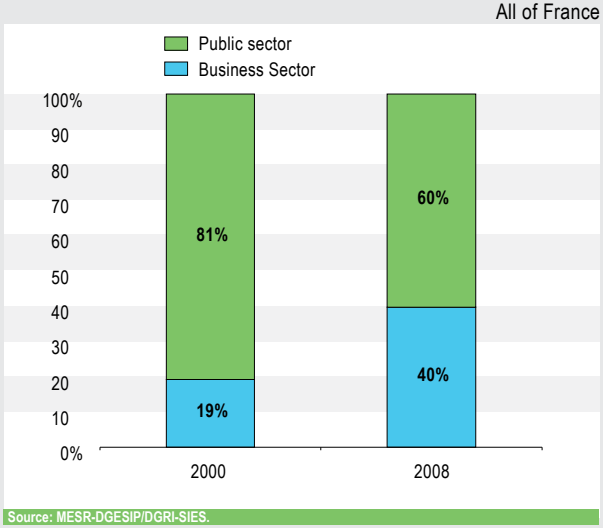
In 2008, the government spent €2.5bn on R & D environment. The environment absorbs 43% of this expenditure (€1bn) with first place going to academic research into the natural environment. The "energy" (€929 million) and "transport equipment industries" (€480 million) goals arise primarily from organisations like EPIC and EPST *(Graph 03)*.

17% of MIRES research budget credits were devoted to the environment in 2010. The share of budget allocations for the different "environment" goals is €2.6 billion *(Graph 04)*.

Company sector: *data resulting from the annual survey of companies conducting R & D on national territory.*
Public Sector: *data drawn from the survey on the distribution of socio-economic objectives of the budget for research and the MIRES survey results on R&D expenditurs and public sector resources.*
European methodology *excludes for example: water management, R&D in the fields of energy, the fight against climate change.*
Socio-economic goals *refer to R&D purposes and measures the total effort committed to specific goals in public research. They are grouped in a classification which allows for international comparisons.*
Taking account of the cross-cutting nature *of the environment operates differently within the business and public sector:*
- Companies: the survey asks companies about their share (%) of domestic R&D expenditure devoted to protecting the environment.
- Public sector: the survey on the breakdown of the budget by socio-economic goals forecasting a level of commitment enables the establishment of a utilisation percentage of credits devoted to the environment. This percentage is applied to the amount of GERD following the R&D annual survey.

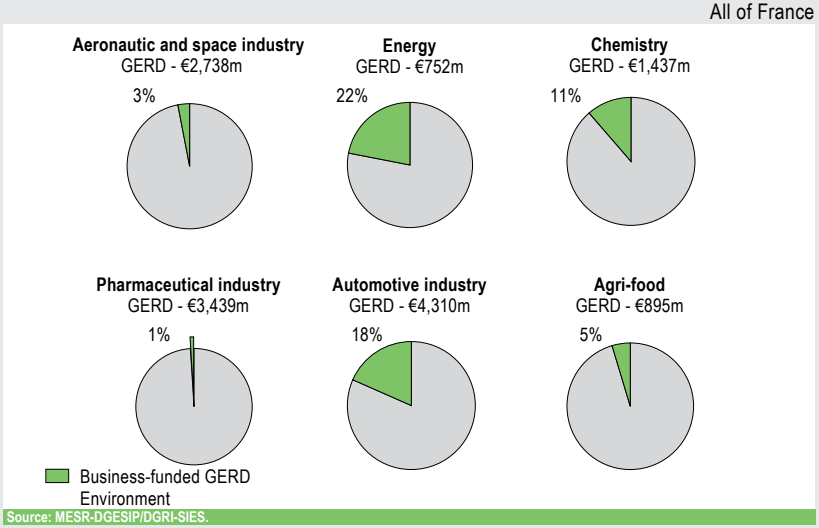
Source: MESR-DGESIP/DGRI-SIES.
Scope: All of France.

01 GERD devoted to the environment in 2000 and 2008 (%)



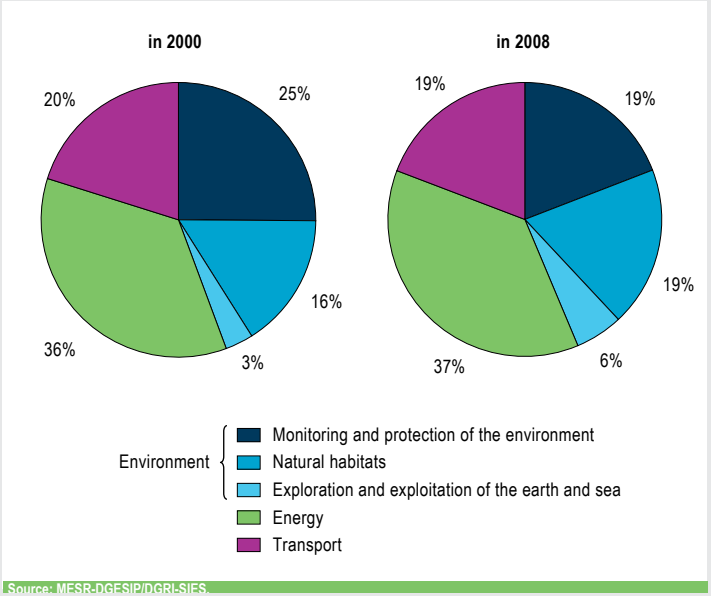
Source: MESR-DGESIP/DGRI-SIES.

02 Share of GERD devoted to environment in 6 areas of research in 2008



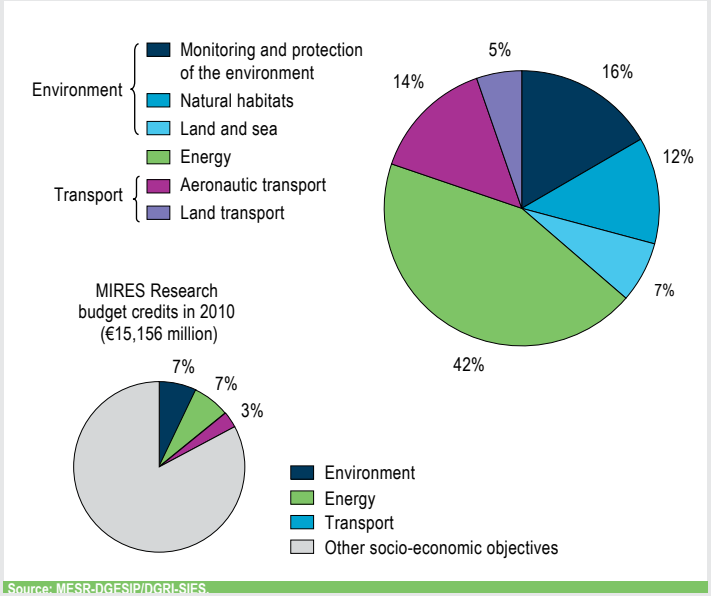
Source: MESR-DGESIP/DGRI-SIES.

03 Share of environmental R&D fields in the public sector (%)



Source: MESR-DGESIP/DGRI-SIES.

04 Budget credits 2010 - Breakdown by socio-economic objectives for environmental R&D (%)



Source: MESR-DGESIP/DGRI-SIES.

33

France ranks third in terms of participation in the Framework Programme for Research and Development (FP7) behind Germany and the United Kingdom. It is involved in 53.1% of FP7 projects listed in late March 2010 and coordinates more than a fifth of the projects in which it is implicated. France is particularly involved in the aeronautics and space and nuclear sectors.

The FP is a tool for funding research and development used by the European Commission to contribute to developing European research efforts Since 1984, FP's have succeeded each other in 4-year periods, until FP7, due to last seven years (2007-2013). They comprise a certain number of programmes, sub-programmes and actions which give rise to specific calls for tender. These bids result in projects, which usually involve several research teams.

FP7, amounting to €53.2bn (including Euratom), lists 3,229 projects outside the Marie Curie fellowships and European Research Council (the specific "People" and "Ideas" programmes). France is heavily involved in FP7: French teams are involved in 53.1% of projects and coordinate 11.2%.

Nearly 87% of 40,729 research teams involved in all FP7 projects are part of the European Union (EU 27) (*Graph 01*). 51% of total participation is concentrated in five EU-27 countries: Germany with 13.5% participation, the United Kingdom and France (with 12.3% and 9.7 participation respectively) then Italy (9%) and Spain (6.9%). Among non-EU-27 Member States, Switzerland, Norway and Israel are the most involved. Together they account for nearly half the 13.3% participation of non EU-27 countries.

In FP7, Germany leads in six out of the twelve fields of application compared to British and French teams (*Graph 02a*). The United Kingdom leads in "biomedicine, health, biotechnologies for health", "environment and planning" and "innovation and technology transfer", with France leading in "aeronautics and space" and the "nuclear sector" (with a participation rate of 19.4% and 15.8% respectively). The predominance of Germany is especially marked in "science and information technology and communication", "production processes, materials, nanotechnology, sensors," "energy" and "land transport and inter-modality" sectors.

In six out of the twelve application fields, Germany is the leading coordinator in FP7 (*Graph 02b*). It coordinates about one fifth of the projects in "production processes, materials, nanotechnology, sensors, "energy" and "environment and planning." France comes top in "aeronautics and space" and the "nuclear sector" coordinating around 30% and 40% respectively. The United Kingdom is the premier coordinator of projects in "agronomy, biotechnology, food and living resources", "social sciences", "Land transport and inter-modality" and "innovation and technology transfer." .

In FP7, teams of French public institutions predominate in the project areas of "Environment and Planning", "Biomedicine, health, biotechnology for health", "international cooperation, access to infrastructure and coordination, and agronomy, agro biotechnology - food and living resources" (with the total share of French interests approaching 75%) (*Graph 03*). These last two areas are also those in which the targeted research institutions participate the most (over 50%), with "environment and planning," "nuclear" and "biomedicine, health and biotechnology for health" (between 41% and 49%). The preferred fields of academic research institutions are "social sciences", "biomedicine, health and biotechnology for health" and "international cooperation, coordination and access to infrastructure" (a share of over 30%).

French private institutions dominate six areas: "Science and information technology and communication", "production processes, materials, nanotechnology, sensors", "energy", "aeronautics and space", "land transport and inter-modality" and "innovation and technology transfer" with the share of total French contributions between 52% and 72%.

FP7 source data are supplied by the of the European Commission's (EC) E-Corda database They comprise all FP projects (including Euratom) available in the database as of 25 March 2010. The data supplied refer to projects which were the subject of a contract signed between the project participants and the EC.

Based on these data, the OST (Observatoire des sciences et techniques: Science and Technology Observatory) performs a reclassification of FP programmes according to a thematic classification in the twelve application fields. This ranking takes place in blocks at activity level under each of the FP programmes: all projects belonging to one programme activity have a single thematic classification.

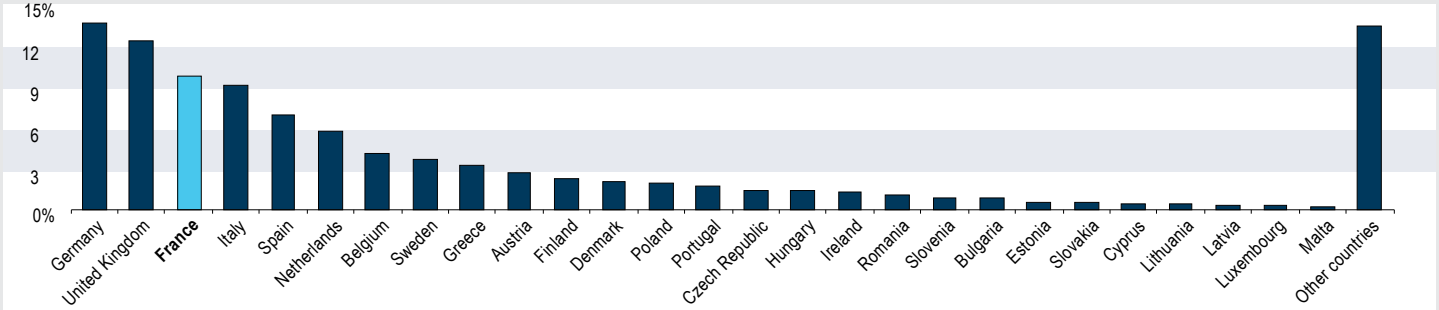
The totals presented at FP level count the FP projects which have have actually received an EC funding contract. The Marie Curie fellowships and European Research Council grants (mainly attributed to individuals) are counted when calculating participation rates but not when calculating coordination rates.

Three types of data are used: project (consortia comprising several partners for a specific time and objectives, funded accordingly), coordination (one partner responsible for project management), and participation (involvement of a laboratory, institution or country in a project).

*The **participation rate** of a country is the ratio between the number of teams from countries participating in the FP and the total number of participating teams.*
*The **evel of coordination** between countries is the ratio between the number of projects coordinated by the teams in the country and the total number of projects.*

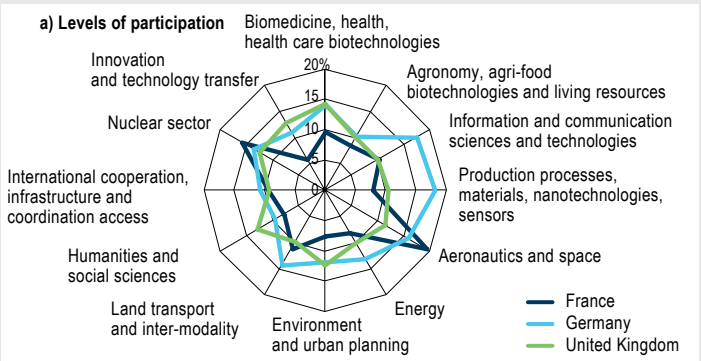
Source: OST-2010 Report.

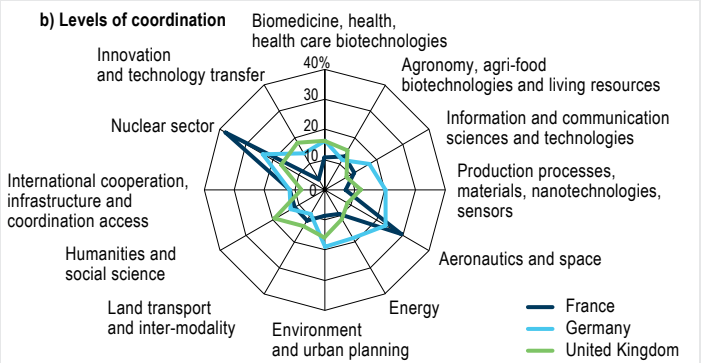
01 Participation rates of the 27 European Union Member States' and other countries in FP7 (%)



Source: OST, 2008 report (Thomson Reuters data, OST processing).

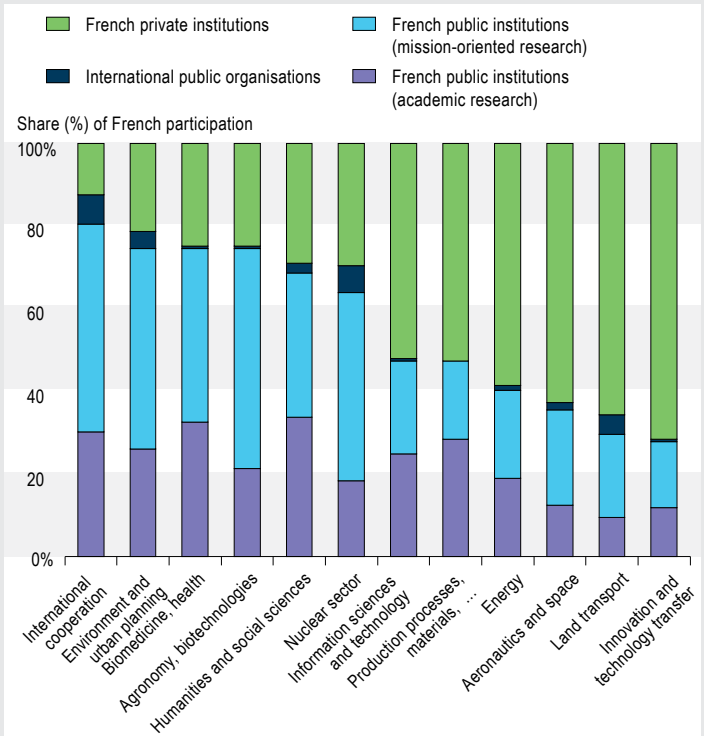
02 Rates of participation and coordination for France, Germany and the United Kingdom in FP7 projects according to field of application (%)





Source: Source: OST, 2008 report (Thomson Reuters data, OST processing).

03 Distribution of French participations in FP7 projects according to type of institution by field of application (in %)



Source: Source: OST, 2008 report (Thomson Reuters data, OST processing).

34

In 2008, France ranked sixth for its world share in scientific publications. Between 2003 and 2008, its impact factor increased but remained below the world average. French research has retained a strong specialisation in mathematics. In 2008, the EU and the US were France's premier partners.

In 2008, France's world share in scientific publications amounted to 4.2% and its citation index (within two years) to 4.2%. Its immediate impact factor (the relation between the share of citations and the share of publications) very slightly exceeds the global average, which is 1 per construction (*Graph 01*).

At the beginning of the '90s, France's world share in publications rose to reach 5.4% in 1995. It remained stable before falling regularly after 1999 – due in particular to the arrival of new countries on the international scientific scene. France's world share in citations progressed until 1997 before gradually falling as of 2001, then stabilising in 2007. France's impact factor improved over the period as a whole, rising from 0.91 in 1993 to 1.01 in 2008.

In this same year, France's disciplinary profile was balanced, with the exception of its strong specialisation in mathematics (specialisation index of 1.47). Its specialisation factors stood slightly above 1 in physics and astronomical sciences and lower than 1 in applied biology-ecology (*Graph 2a*). Between 2003 and 2008, France developed its specialisation in mathematics, physics, astronomical and engineering sciences. By contrast, its specialisation factor in chemistry and maths dropped.

In 2008, France's immediate impact factor was above the world average in applied biology-ecology (1.28), chemistry (1.12), physics (1.10), universe science (1.08) and engineering sciences (1.07) (*Graph 02b*). It was close to this average in mathematics and fundamental biology and below it in medical research.

Between 2003 and 2008, growth in France's impact factor was the most significant in applied biology/ecology (+18%), physics (+14%) and medical and universe science research (+11%). In Mathematics, the discipline in which France is most specialised, its impact factor has diminished slightly.

In 2008, the 27 member states of the European Union (except France) were involved in over half the international joint publications of France, in which it is by far the primary partner (*Table 3*). The United States are involved in a quarter of French joint publications. Within the EU, Germany and the United Kingdom were on a more or less equal footing being involved in around 15% of France's joint publications. They were followed by countries geographically close to France: Italy, Spain and Switzerland. Canada, with a share of 7.1%, is in eighth place.

The affinity factor cancels out any influence linked to the size of countries. It highlights privileged partnerships linked to linguistic or geographical closeness such as those existing between France and Belgium, Switzerland, Italy and Spain (a factor higher than 1).

In 2008, the United States produced more than a quarter of the world's scientific publications (24.4%). They were followed by China (8.8%), Japan (6.8%), the United Kingdom and Germany (5.7% each) (*Graph 04*). France ranked sixth (4.2%) above Italy (3.6%), Canada (3.3%), India and Spain (2.8% each). They were followed by South Korea, Australia and Russia.

Among the countries whose world share in publications rose the most sharply between 2003 and 2008, China's contributions doubled; those of Turkey and Brazil increased by more than 40%. They were followed by South Korea, Taiwan and India.

The bibliographic database used was developed on the basis of Thomson Reuters' Web of Science, Philadelphia (USA).

***"French publications"** refer to those where at least one of the authors is French. The publication count here results from a fraction calculation: when an article is signed by a single laboratory, e.g. French, one point is attributed to France; but if the article is jointly signed by laboratories in two different countries, half a point is attributed to each country.*

Counting in this way measures a country's contribution to world production. To support their robustness, indicators are calculated in years averaged over a three-year period; the value for 2008 is the average of values for 2006, 2007 and 2008.

*A country's **world share in publications** is the ratio between the number of its publications and the number of world publications.*

***The world citation share** is calculated over two years including the year of publication.*

***A country's immediate impact factor** is the ratio between its world citation index and its world share of publications.*

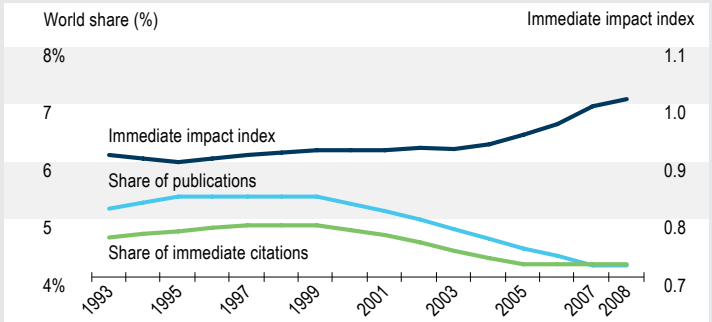
***The specialisation factor** is the ratio between the world share of publications in a given discipline and the world share all disciplines included.*

***France's share in joint international publications** with a given country is the ratio between France's number of joint publications with this country and its total number of joint publications, in whole numbers (once an article is signed by at least one laboratory in the country, a whole point is attributed to the country in question, irrespective of the number of laboratories signing the article).*

*France's **affinity index** with a given country is its share of joint international publications weighted by the partner country's world share of joint international publications.*

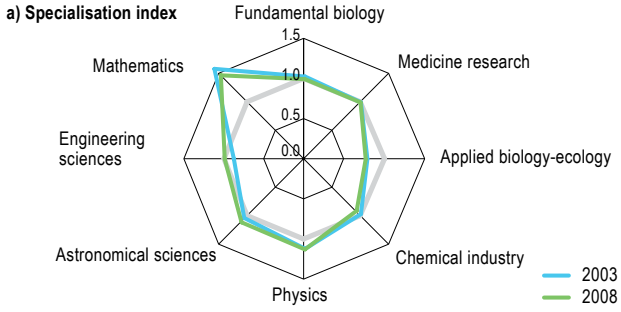
Source: Rapport OST-2010.

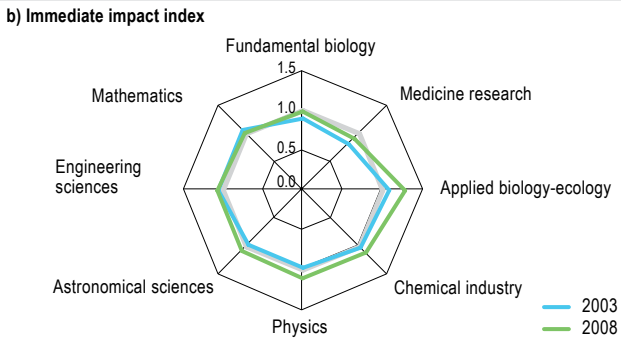
01 Evolution in France's world share in publications and citations and its impact factor between 1993 and 2008, all disciplines included



Source: s Source: OST, 2008 report (Thomson Reuters data, OST processing).

02 Specialisation index and impact factor for scientific publications in France (1993, 2003 and 2008) by scientific discipline





Source: s Source: OST, 2008 report (Thomson Reuters data, OST processing).

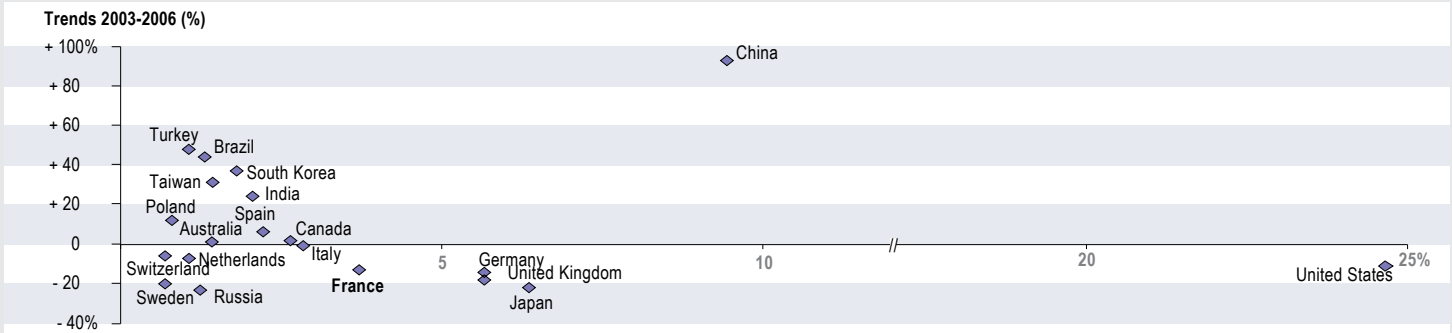
03 France's share in joint international publications and affinity index with its ten main partner countries, all disciplines included (2008)

Rank	Zone/Country	Share of joint international publications with France in 2008 (%)	Affinity index of France in 2008
	27 European Union members		
1	(excl France)	56.8%	na
2	United States	24.7%	0.59
3	Germany	16.1%	0.88
4	United Kingdom	15.3%	0.85
5	Italy	12.3%	1.32
6	Spain	8.8%	1.23
7	Switzerland	7.5%	1.32
8	Canada	7.1%	0.71
9	Belgium	6.8%	1.69
10	Netherlands	6.1%	0.98

* na = not available

Source: OST, 2008 report (Thomson Reuters data, OST processing).

04 World share in scientific publications and trends in primary producing countries all disciplines included (%)



Source: s Source: OST, 2008 report (Thomson Reuters data, OST processing).

35

In 2008, France ranked sixth worldwide in the European patent system with 6.3% of patent applications. It specialises in the "machinery/mechanical engineering/transport" sector.

In the US patent system, France occupies 8th place worldwide with 2% of patents filed across all sectors. It specialises in "pharmaceutical biotechnologies" and "chemical materials". In both systems, the French world share has been decreasing since 1994 but in terms of the US patent system it has stabilised since 2006.

A patent is a certificate of ownership granting its holder the exclusive rights of use of an invention for a limited period of time in a limited area. Rights associated with filing patents are linked to those countries covered by the office at which the patent holder made the request. Two patent systems are particularly attractive to applicants: the American and the European systems. According to their strategy, patent applicants may favour one system over another because the two systems patent and protect very differently on two different operating markets. These strategies largely explain why results in the two patent systems concerning indicators of production technology are different.

In 2008, the global share of European patent applications in France was 6.3%. This share was 8.3% in 1994 (*Graph 01*) Between 1994 and 2008, it diminished steadily, resulting in a 2-point fall over the period. In the American patent system, France's world share in patents granted was 2%. In 1994, France's world share in this system stood at 2.9%. It then declined until 2006, by nearly a point, and has levelled off since. The decline in France's global share in the two systems is partly due to the dynamism in the production technology of new countries, resulting in a significant increase in patent applications in the U.S. and European patents systems.

In the European patent system, in 2008 France specialised in machinery, mechanics and transport equipment (specialisation factor of 1.42) and household goods, construction and public works (factor of 1.25). Instrumentation was a sub-specialisation (factor of 0.77) as was chemistry and materials (0.80) (*Graph 02a*).

In the American patent system, in 2008, France was highly specialised in pharmaceuticals and biotechnologies (specialisation factor of 1.80) followed by chemistry and materials (1.56), machinery, mechanics and transport equipment and industrial processes (factors of 1.37 and 1.24 respectively). (*Graph 02b*). Electronics and electricity (0.75) and instrumentation (0.79) were sub-specialisations. Between 2003 and 2008, with the exception of "pharmaceutical-biotechnology", France strengthened its position in all its areas of specialisation and in particular "machine/mechanical engineering/transport" (index up 19%).

In 2008, the United States, Japan and Germany accounted for the largest world share of European patent applications (with 26.6%, 17.8% and 17.1% of applications respectively) (*Graph 03a*). They were followed by France (6.3%) and the United Kingdom (4.3%). Between 2003 and 2008, South Korea substantially increased its world share, by a factor of more than 2. Japan increased its share by more than 20% while the United States, France, Germany and the United Kingdom saw a reduction in their share of at least 15%.

In 2008, the United States (50.2%) and Japan (21.3%) were the leading countries in terms of American patents granted (*Graph 03b*). Germany (5.7%), ranked third, was the leading European country. Taiwan and South Korea ranked fourth and fifth with respective shares of 4% and 3.8%. They were followed by Canada and the United Kingdom (2.1 each) and France (2%) Between 2003 and 2008, there was a significant increase in the world share of American patents granted to South Korea (80%) and Taiwan (20%) and a decrease in France's (-18%) and the United Kingdom's (-10%) share of American patents. There share of U.S. patents from Germany (- 15%), France (- 16%) or the United Kingdom (- 10%) also declined.

The indicators are calculated using data constructed and delivered by the OECD from the European Patent Office (EPO) PATSTAT database, and enriched by data from the OECD REGPAT database (January 2010).

They refer to the dates of publication of ***patent*** *applications (not the date when patents were granted) in order to relate to the research on which the application is based. A patent request is published 18 months after filing and only requests for patents published are taken into account. Historically, for* ***American patents*** *delivered by the United States Patent and Trademark Office (USPTO), only patents actually granted are published. This leads to a significant lapse of time between the initial filing process and publication: publication of a granted patent may take place up to five years after the filing of the application.*

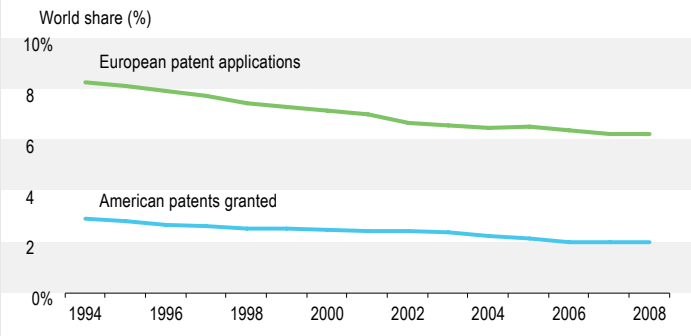
The patent count is carried out on the basis of the inventor's address (where the research was performed) and not that of the applicant (where the institution or company filing the application is located). To strengthen their robustness, indicators are calculated in years averaged over a three-year period; the value for 2008 is the average of values for 2006, 2007 and 2008.

A country's world *share of patent applications (European or American) is the ratio between that country's patent applications and the total number of patent applications.*

A country's specialisation factor *is the ratio between the country's world share in a given field and its world share of all fields combined.*

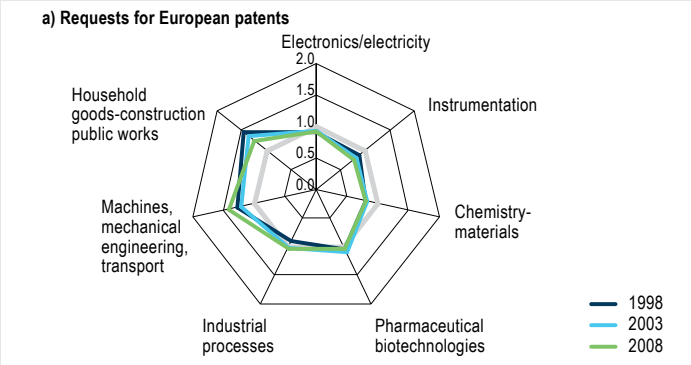
Source: Rapport OST-2010.

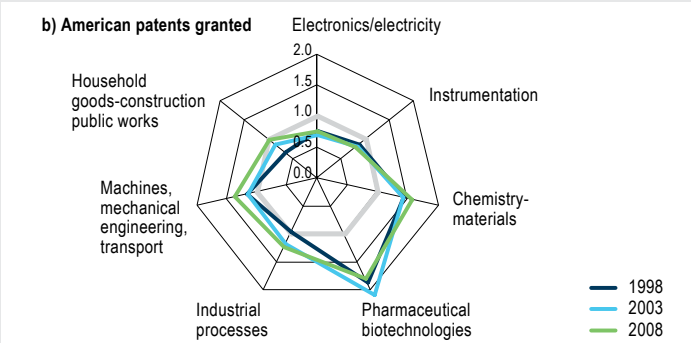
01 Trends in France's world share in patents between 1994 and 2008, all fields included



Source: Report OST-2010 (data OEB [Pats tat], analysis OECD and OST).

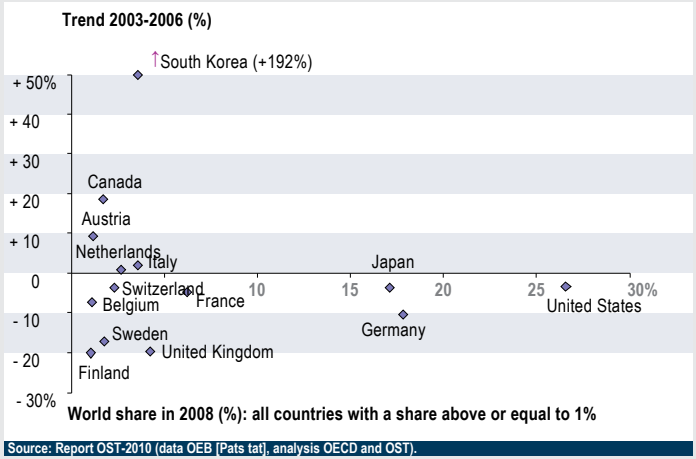
02 France's specialisation factor for technology patents (1998, 2003 and 2008)





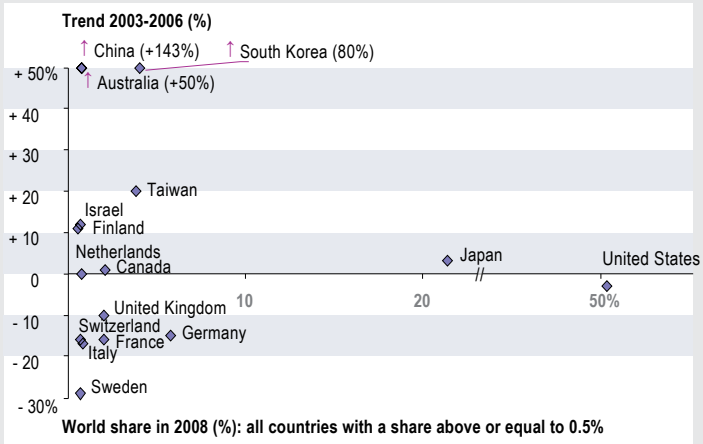
Source: Report OST-2010 (data OEB [Pats tat], analysis OECD and OST).

03a World share of European patent applications and evolution, all fields included (%)



Source: Report OST-2010 (data OEB [Pats tat], analysis OECD and OST).

03b World share of American patents granted and trends, all fields included (%)



Source: Report OST-2010 (data OEB [Pats tat], analysis OECD and OST).

Appendix

Students enrolled in higher education since 1960

Metropolitan France + DOM

	1960-1961 (3)	1970-1971 (3)	1980-1981	1990-1991	2000-2001	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
Universities (excl IUT and IUFM)	214.7	637.0	804.4	1,085.6	1,277.5	1,309.1	1,285.4	1,247.5	1,223.7	1,267.9
Annual trend (%)					0.4	- 0.2	- 1.8	- 2.9	(1) - 1.3	3.6
IUT		24.2	53.7	74.3	119.2	112.6	113.8	116.2	118.1	118.1
Annual trend (%)					1.6	0.2	1.0	2.2	1.6	0.0
STS	(2) 8.0	(2) 26.8	67.9	199.3	238.9	230.4	228.3	230.9	234.2	240.3
Annual trend (%)					0.0	0.1	- 0.9	1.1	1.4	2.6
of which CGPE (4)	(2) 21.0	(2) 32.6	40.1	64.4	70.3	74.8	76.2	78.1	80.0	81.1
Annual trend (%)					- 0.8	2.2	1.8	2.5	2.5	1.4
Other institutions and courses	(2) 66.0	(2) 130.0	215.0	293.4	454.3	556.4	550.2	558.8	578.2	608.6
Annual trend (%)					4.1	2.7	- 1.1	1.6	3.5	5.3
All	**309.7**	**850.6**	**1,181.1**	**1,717.1**	**2,160.3**	**2,283.3**	**2,253.8**	**2,231.5**	**2,234.2**	**2,316.1**
Annual trend (%)					1.1	0.6	- 1.3	- 1.0	0.1	3.7

(1) Trends at constant coverage, i.e excluding IUFM students in 2008-2009 and those from 17 engineering schools leaving the university domain in 2007-2008. Evolution between 2008-2009 and 2007-2008 for universities (except IUT and IUFM) is- 1.3% instead of- 1.9%.
(2) Estimate.
(3) Metropolitan France figures for 1960-1961 and 1970-1971.
(4) Numbers of students enrolled in accounting and finance courses were included with CPGE before 1990 and with other institutions and courses afterwards.
Sources: MESR-DGESIP/DGRI-SIES SMIS information system, surveys conducted by the SMIS in engineering schools, higher education institutions not affiliated to universities, information on STS and CPGE collected by the MoR-MEN-DEPP, surveys specific to departments in charge of agriculture, health, social affairs and culture.

Trends in number of students enrolled in higher education

Metropolitan France + DOM

	1990-1991	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
Universities	**1,159,937**	**1,425,665**	**1,424,536**	**1,421,719**	**1,399,177**	**1,363,750**	**1,404,376**	**1,444,583**
General and health-related disciplines	1,085,609	1,311,943	1,312,141	1,309,122	1,285,408	1,247,527	1,223,717	1,267,926
of which: university engineering courses (1)	*10,545*	*24,855*	*25,759*	*25,606*	*25,983*	*26,414*	*20,429*	*20,299*
IUT	74,328	113,722	112,395	112,597	113,769	116,223	118,115	118,139
IUFM							62,544	58,518
Grands établissements	**15,536**	**18,655**	**25,603**	**25,944**	**25,776**	**29,726**	**31,121**	**31,398**
IUFM total (2)		**85,808**	**83,622**	**81,565**	**74,161**	**70,100**	**64,037**	**59,953**
STS (3)	**199,333**	**234,195**	**230,275**	**230,403**	**228,329**	**230,877**	**234,164**	**240,322**
Public MEN	108,262	151,023	149,688	149,849	147,948	147,305	147,592	149,832
Public other ministries	9,343	12,881	12,482	12,202	11,826	11,543	11,079	11,388
Private sector	81,728	70,291	68,105	68,352	68,555	72,029	75,493	79,102
CPGE	**64,427**	**72,053**	**73,147**	**74,790**	**76,160**	**78,072**	**80,003**	**81,135**
Public MEN	52,572	59,160	60,407	61,938	62,904	64,157	66,021	66,652
Public other ministries	1,419	1,715	1,772	1,708	1,677	1,680	1,694	1,747
Private sector	10,436	11,178	10,968	11,144	11,579	12,235	12,288	12,736
Non-university accounting courses	**5,587**	**7,643**	**7,788**	**7,499**	**7,430**	**7,871**	**8,377**	**9,076**
Public MEN	3,951	4,875	4,909	4,979	4,910	5,151	5,280	5,557
Private sector	1,636	2,768	2,879	2,520	2,520	2,720	3,097	3,519
Integrated preparatory classes	**3,965**	**3,271**	**3,309**	**3,058**	**3,162**	**3,835**	**4,066**	**4,352**
Universities of Technology	**3,157**	**6,974**	**6,962**	**7,375**	**7,604**	**7,931**	**8,248**	**8,557**
INP (National Polytechnical Institute)	**8,250**	**12,794**	**12,514**	**12,478**	**12,445**	**7,743**	**6,763**	**7,055**
Engineering courses (1)	**57,653**	**105,007**	**107,219**	**108,057**	**108,846**	**108,773**	**114,086**	**118,341**
University	10,545	24,855	25,759	25,606	25,983	26,414	20,429	20,299
TUs	1,689	4,321	4,511	4,838	5,118	5,450	5,795	5,903
INPs	5,091	9,600	9,494	9,532	9,483	5,989	4,992	5,161
Public MEN	15,461	22,550	23,525	23,431	22,342	24,290	33,553	35,990
Public other ministries	10,865	17,270	17,178	17,458	18,420	17,357	16,922	16,813
Private sector	14,002	26,411	26,752	27,192	27,500	29,273	32,395	34,175
Business, management, sales and accounting schools & colleges	**46,128**	**80,619**	**83,176**	**88,437**	**87,333**	**95,835**	**100,609**	**116,303**
Private institutions for university education	**19,971**	**18,058**	**19,820**	**21,306**	**21,024**	**22,225**	**23,219**	**26,138**
Primary-school teacher écoles normales	**16,500**							
Ecoles normales supérieures	**2,675**	**3,104**	**3,122**	**3,191**	**3,658**	**3,680**	**4,122**	**4,339**
Legal and administrative colleges	**7,328**	**10,858**	**10,750**	**10,477**	**10,425**	**8,617**	**7,707**	**8,378**
Arts and cultural écoles supérieures (4)	**41,988**	**61,444**	**62,864**	**64,598**	**64,531**	**61,834**	**61,617**	**66,479**
Paramedical and social schools (5)	**74,435**	**119,456**	**124,201**	**131,654**	**131,100**	**134,407**	**137,165**	**137,165**
Other schools and courses (6)	**7,515**	**29,322**	**30,653**	**30,692**	**33,255**	**34,072**	**38,242**	**42,410**
Metropolitan France + DOM (7)	**1,717,060**	**2,256,150**	**2,269,797**	**2,283,267**	**2,253,832**	**2,231,495**	**2,234,162**	**2,316,103**

(1) Including engineering courses in partnership. **(2)** A From 2008-2009, IUFMs were integrated into their universities of affiliation, except those of Guadeloupe, French Guyana and Martinique. **(3)** Including post-BTS and DSAA in 1990-1991. **(4)** Including écoles supérieures for architecture, journalism and communication. **(5)** Temporary data in 2009-2010 for paramedical and social courses, 2008-2009 data in 2009-2010, estimate for health data in 2001-2002. **(6)** Non-homogeneous group (veterinary school, other schools affiliated to other ministries.) **(7)** Without duplication of engineering courses dependent on universities, INP, universities of technology and integrated in a university IUFM.

Sources: SMIS information system, surveys conducted by the SMIS in engineering schools, higher education institutions not affiliated to universities, information on STS and CPGE collected by the MoR-MEN-DEPP, surveys specific to departments in charge of agriculture, health, social affairs and culture.

Appendix

Socio-economic objectives selected for the evaluation of R&D expenditure on the environment

1st step	2nd step	3rd step
ENVIRONMENT	ENERGY	INDUSTRIAL PRODUCTION AND TECHNOLOGIES
Environment objective - Monitoring and protecting the global environment: – Control and protection of the atmosphere and climate; – Other measures for monitoring and protecting water, soil and subsoil, noise and all elements related to pollution including research on clean technologies and products **Exploration and exploitation of the earth and sea objective:** – Production and exploitation of the sea (not including living resources and research on marine pollution): physical research, chemical and marine biologies – Other programmes of exploration and exploitation of the Earth: Mining, Oil and gas exploration and exploitation of underwater plateaus, crust and mantle, hydrology, general research on the atmosphere (excluding pollution) and other research on exploration and exploitation of the Earth **Natural environments objective:** Earth, ocean, atmosphere, space	**Production, distribution and rational use of energy objective. (Excluding production and distribution of energy):** – Fossil fuels and derivatives, nuclear fission, nuclear fusion, radioactive waste management including retirements, renewable energy sources and other research on the production, distribution and rational use of energy	**Land and water transport equipment industries and aeronautical transport equipment industries (excluding space) objective**

Education levels

French classification of education levels established by the *Commission statistique nationale de la formation professionnelle et de la promotion sociale* (Office for National Statistics on Vocational Training and Social Development)

Level VI: Left education after the middle years of the first cycle of secondary education (Years 7)-9 and one-year pre-vocational training

Level Vb: Left general year 10, year 9 and 10 technology and classes of the second short cycle before the terminal year.

Level V: Left education after short-cycle, professional-course final year or dropped out of long-cycle secondary education before Year 13.

Level IV: Left education at the end of long-cycle secondary education Year 13 or dropped out of post-*baccalauréat* courses before reaching Level III.

Level III: Left education with a "*baccalauréat* +2 years" qualification (DUT, BTS, DEUG, training colleges in Medicine and social services, etc.)

Level II and I: Left education with a second or third-cycle university diploma, or a diploma from a *Grande Ecole*.

International Standard Classification of Education (ISCED)

ISCED 1: Primary education

ISCED 2: Lower secondary education

ISCED 3: Upper secondary education

ISCED 4: Post-secondary education not included in higher education (practically non-existent in France): basic legal studies, DAEU preparation)

ISCED 5: First and second-cycle higher education

ISCED 5A: also called "university-type" higher education = preparing for Bachelor's degree and master's
(General university disciplines, engineering and business school diplomas etc)

ISCED 5B: Vocational higher education (DUT, BTS, Paramedical and social courses, etc.)

ISCED 6: Third-cycle higher education (PhD research)

This classification aims to produce comparable statistics on education and training in different countries.
It results from an international agreement under the auspices of UNESCO. Based on this classification, student numbers, graduate flows and funding can be broken down according to the different education cycles. It is also used to classify the population by education level; the criterion used is successful education certified by a diploma. The 1987 classification is currently being revised. The three "LMD" levels should be defined in the 2011 classification.

List of acronyms and abbreviations

ACOSS: *Agence centrale des organismes de sécurité sociale* – Central agency of social security organisations.
ADEME: *Agence pour l'environnement et la maîtrise de l'énergie* – Agency for the environment and energy.
AERES: *Agence d'évaluation de la recherche et de l'enseignement supérieur* – Evaluation agency for research and higher education.
AES: *Filière Administrative, Économique et Sociale* – Economic and Social Administration option.
ALINE: *Allocation d'installation étudiante* – student settling-in allowance.
ALS: *Allocation de logement à caractère social* – Social housing benefit.
ANR: *Agence nationale de la recherche* – National Research Agency.
ANRS: *Agence nationale de recherche sur le SIDA et les hépatites virales* – National agency for Research on AIDS and viral hepatitis
APEL: Accreditation of Prior and Experiential Learning.
APL: *Aide personnalisée au logement* – personalised housing benefit.
ASU: *Administration scolaire et universitaire* – school and university administration.
ATER: *Attaché temporaire d'enseignement et de recherche* – Temporary research and teaching assistants.
ATSS: *(Personnels) administratifs, techniques, de service, de santé et sociaux* – Administrative, technical, service, health and social (staff).
BCRD: *Budget civil de recherche et développement* – civil research and development budget.
BCS: Grants based on social criteria.
BEP: Certificate of vocational education.
BTS: *Brevet de technicien supérieur* – Higher vocational diploma.
Business-funded GERD: Business-funded Gross domestic Expenditure on Research and Development.
Business-funded NRDE: Business-funded National Research and Development Expenditure.
CA: Chiffre d'affaires – turnover.
CAP: Certificate of vocational aptitude.
CDI: Permanent contract.
CEA: (French Atomic Energy Commission) *Commissariat à l'énergie atomique* – French atomic energy commission.
CEPR: *Contrat de projet état region* – State Region project contract.
CEPREMAP: *Centre pour la recherche économique et ses applications* – Centre for economic research and its applications.
CEREQ: *Centre d'études et de recherches sur les qualifications* – Centre for study and research in training and education policy.
CERI: *Centre d'études et de recherches internationales* – French centre for education and international research.
CERN: *Conseil européen pour la recherche nucléaire* – European Organisation for Nuclear Research.
CESI: *Centre d'études supérieures industrielles* – Centre for higher industrial studies.
CHU: *Centre hospitalier universitaire* – University hospital.
CIFRE: *Convention industrielle de formation par la recherche* – Industrial Agreement for Training through Research.
CIR: Research tax credit.
CLCC: *Centre de lutte contre cancer* – Centre for the Fight against Cancer.
CNAF: *Caisse nationale d'allocations familiales* – National Family Allowance Fund.
CNAM: *Conservatoire national des arts et métiers – National* Centre of Industrial Art and Design.
CNES: *Centre national d'études spatiales* – National Space Agency.
CNRS: *Centre national de recherche scientifique* – National Centre for Scientific Research.
CNU: *Conseil national des universités* – National University Council.
COM: French overseas territory.
CPGE: *Classe préparatoire aux grandes écoles* – preparatory classes for Grandes Ecoles.
CROUS: *Centre régional des oeuvres universitaires et scolaires* – French student support agency.
CSP: Socio-professional category.
CTI: *Commission des titres d'ingénieurs* – Commission for Engineering Bachelor's degree accreditation.
CTRS: *Centre thématique de recherche et de soin* – Thematic research and care centre.
CUCES: *Centre universitaire de coopération économique et sociale* – University centre for economic and social cooperation.
CUEFA: *Centre universitaire d'éducation et de formation des adultes* – University centre for adult education and training.
CUFR: *Centre universitaire de formation et de recherche* – University centre for education and research.
DAEU: *Diplôme d'accès aux études universitaires* – diploma giving access to university studies.
DCG: *Diplôme de comptabilité et de gestion* – accounting and management diploma – formerly DPECF.
DEA: *Diplôme d'études approfondies* (diploma testifying to five years of tertiary education), *magistère* (post-grad. vocational qualification).
DEE: Domestic Expenditure on Education.
DEPP: *Direction de l'évaluation, de la prospective et de la performance* – Evaluation, Prospective and Performance Directorate.
DERD: External Expenditure on Research and Development.
DERDE: Business-funded GERD: Business-funded Gross domestic Expenditure on Research and Development.
DESA: *Diplôme d'études supérieures spécialisées* – post-grad. applied diploma.
DESCF: *Diplôme d'études supérieures comptables et financières* – higher education diploma in accounting and finance.
DESE: *Diplôme d'études supérieures spécialisées* – post-grad. economics diploma.
DESS: *Diplôme d'études supérieures spécialisées* – post-grad. specialised diploma.

DEST: *Diplôme d'études supérieures spécialisées* – post-grad. technical diploma.
DEUG: *Diplôme d'études universitaires générales* – undergraduate diploma of general university studies.
DEUST: *Diplôme d'études universitaires scientifiques et techniques* – undergraduate diploma of scientific and technical university studies.
DGESCO: *Direction générale de l'enseignement scolaire* – Directorate-General for Education.
DGESIP: *Direction générale pour l'enseignement supérieur et l'insertion professionnelle* – Directorate-General for Higher Education and School-to-Work transition.
DGFIP: *Direction générale des finances publiques* – Directorate-General for Public Finance.
DGI: *Direction générale des impôts* – Directorate-General of Taxation.
DGRH: *Direction générale des ressources humaines* – Directorate-General for Human Resources.
DGRI: *Direction générale pour la recherche et l'innovation* – Directorate-General for Research and Innovation.
DIEO: Personnel of Management, Inspection, Education and Careers Service.
DIRD: Gross domestic Expenditure on Research and Development.
DNB: *Diplôme national du brevet* (ISCED 2).
DNTS: Technological university diploma (DUT).
DOM: *Département d'outre-mer* – French overseas department.
DPC: *Diplôme de premier cycle* – First cycle Diploma.
DPCE: *Diplôme de premier cycle* – First economic cycle Diploma.
DPCT: *Diplôme de premier cycle* – First technological cycle Diploma.
DRT: *Diplôme de recherche technologique* – Technological research diploma.
DUT: *Diplôme universitaire de technologie* – Technological University Diploma.
EDI: *Emploi à durée indéterminée* – Permanent contract.
ENA: *École nationale d'administration* – European School of Governance.
ENM: *École nationale de la magistrature* – French National School for the Judiciary.
ENS: *École nationale supérieure*.
ENSI: *École nationale supérieure d'ingénieurs* – French National Engineering School.
EPA: *Établissement public à caractère administratif* – Public higher education institution.
EPIC: *Établissement public à caractère industriel et commercial* – public industrial and commercial research agency.
EPO: European Patent Office.
EPSCP: *Établissement public à caractère scientifique, culturel et professionnel* – Public institutions for scientific, cultural and vocational education.
EPST: *Établissement public à caractère scientifique et technologique* – Public scientific and technological research agency.
ES: *Économique et social* – Economics and Social Sciences option.
ETI: *Entreprises de taille intermédiaire* – Meidum-sized enterprises.
EU: European Union.
EUROSTAT: Statistical Office of the European Communities.
FIP: University engineering courses.
FNAL: *Fonds national d'aide au logement* – National Housing Aid Fund.
FNH: *Fonds national de l'habitation* – National Housing Fund.
FSDIE: *Fonds de solidarité et de développement des initiatives étudiantes* – Solidarity and development fund for student initiatives.
FTE: Full-time equivalent.
GDP: Gross Domestic Product.
GE: *Grandes entreprises* – Major companies.
Government-funded GERD: Government-funded Gross domestic Expenditure on Research and Development.
Government-funded NRDE: Government-funded National Research and Development Expenditure.
HDR: *Habilitation à diriger des recherches* – research supervision accreditation.
IAE: *Institut d'administration des entreprises* – Institute for Business Administration.
IEP: *Institut d'études politiques* – Institute of Political Studies.
IFA: *Imposition forfaitaire annuelle* – Annual flat-rate tax.
ILO: International Labour Office.
INALCO: *Institut national des langues et civilisations orientales* – National institute of Oriental languages and civilisations.
INP: National Polytechnical Institute.
INPI: *Institut national de la propriété intellectuelle* – National Institute for Industrial Property.
INPSA: *Institut national de promotion supérieure agricole* – National Institute for advanced agricultural development.
INRA: *Institut national de la recherche agronomique* – National Institute for Agricultural Research.
INRIA: *Institut national de recherche en informatique et en automatique* – National Institute for IT and Telecommunications Research.
INSEE: *Institut national de la statistique et des études économiques* – French National Institute for Statistics and Economic Studies.
INSERM: *Institut national de la santé et de la recherche médicale* – National Institute for Medicine and Medical Research.
IRD: *Institut de recherche pour le développement* – Institute for Development Research.
ISCED*: International Standard Classification of Education (UNESCO).
ITRF: *Ingénieurs et personnels techniques de recherche et formation* – engineers and technical staff for research and training.
IUFM: *Institut universitaire de formation des maîtres* – Teacher training college.

List of acronyms and abbreviations

IUP: *Institut universitaire professionnalisé* – Vocational university institute.
IUT: *Institut universitaire de technologie* – University Institute of Technology.
JEI: *Jeune entreprise innovante* – Young innovative company (YIC).
L: Arts & Humanities.
LASMAS: *Laboratoire d'analyse secondaire et des méthodes appliquées à la sociologie* – Laboratory for Secondary Analysis and Methods Applied to Sociology.
LMD: *Licence, master, doctorat* – Bachelor's degree, Master's and PhD.
LOLF: *Loi Organique relative aux Lois de finances* – French Constitutional by-law on budget acts.
LRU: *Loi relative aux libertés et responsabilités des universities* – Law for University Liberties and Responsibilities.
M1: First year of Master's.
M2: Second year of Master's.
MBA: Master of Business and Administration.
MCF: Lecturers.
MEFI: *Ministère de l'économie, des finances et de l'industrie* – Ministry of the Economy, Finances and Industry.
MEN: French Education Ministry.
MESR: *Ministère de l'Enseignement supérieur et de la Recherche* – Ministry of Higher Education and Research.
MIRES: *Mission interministérielle recherche et enseignement supérieur* – Inter-ministerial Mission for Research and Higher Education.
NAF: *Classification d'activités française* – French classification of economic activities.
NPO: Non-Profit Organisation.
NRDE: National Research and Development Expenditure.
OCDE: Organisation for Economic Co-operation and Development.
OPCA: *Organisme paritaire collecteur agréé* – Joint registered collection agencies.
OST: *Observatoire des sciences et techniques* – Science and Technology Observatory.
OVE: *Observatoire de la vie étudiante* – National Observatory of Student Life.
PACA: Provence-Alpes-Côte d'Azur.
PCEM: *Premier cycle des études médicales* – first cycle of Medicine studies.
PCRD: *Programme-cadre de recherche et développement* – Framework Programme for Research and Development.
PCS: *Professions et catégories sociales* – professions and socio-professional categories.
PI: Intermediate profession.
PR: University professors.
PRES: Centres for Research and Higher Education.
R&D: Research & Development.
R&T: Research and technology.
RNCP: National Inventory of Professional Qualifications.
RTRA: Thematic Advanced Research Networks.
S: Scientific option.
SES: *Section d'éducation spécialisée* – Specialised education section.
SESSI: *Service des études et statistiques industrielles* – Office of Industrial Studies and Statistics.
SHS: Human and social sciences.
SIES: Sub-Directorate for Information Systems and Statistical Studies.
SISE: *Système d'information pour le suivi des étudiants* – Student monitoring Information System.
SME: Small and medium enterprises.
SMI: Small and medium industries.
ST2S: Medicine and Social sciences and technologies (formerly SMS).
STAPS: *Sciences et techniques des activités physiques et sportives* – Physical education and sports science and techniques.
STG: *Sciences et technologies de la gestion* – Management sciences and technology option.
STI: *Sciences et technologies industrielles* – Industrial sciences and technology option.
STS: *Section de techniciens supérieurs* – Undergraduate-level technicians preparing a BTS.
STT: *Sciences et technologies industrielles* – Industrial sciences and technology option.
TIC: Information and communication technologies.
TOM: French overseas territory.
UFR: *Unité de formation et de recherche* – Education and Research Unit.
URSSAF: *Union de recouvrement des cotisations de sécurité sociale et d'allocations familiales* – French Social Security and Family Allocations Agency.
USPTO: United States Patent and Trademark Office.
UT: Technology universities.
VAP: *Validation des acquis professionnels* – validation of professional skills.
$PPP: Dollar measured in purchasing power parity.
€bn: Billion euros.
€m: Million euros.

The Regional Enrolment Atlas 2009-2010

This publication provides the basis for an understanding of regional and national higher education in France.

Student numbers are presented in terms of structure (training institutions) and space (location within urban unit or commune).

This combination of information provides a clearer picture of the distribution of students and training throughout the country.

It is a tool designed to give the different partners and players in the higher education system a common, comprehensive vision of the current situation and recent developments.

€15, Edition 2011 [forthcoming]

> For statistical information
Requests by telephone
or in writing

Centre de documentation
61-65, rue Dutot
75732 Paris Cedex 15

Telephone:
01 55 55 73 58
Email:
depp.documentation@education.gouv.fr

> You wish to view the publications of the Ministry of Education or the Ministry of Higher Education and Research

via Internet
www.education.gouv.fr
www.enseignementsup-recherche.gouv.fr

> You wish to view the publications of the Ministry of Education or the Ministry of Higher Education and Research

Catalogues, items for sale, subscriptions

DEPP
Département de la valorisation et de l'édition
61-65, rue Dutot
75732 Paris Cedex 15

Sales: 01 55 55 72 04
Fax: 01 55 55 72 29

The State of Higher Education and Research in France

The State of Higher Education and Research offers an overall view, backed by figures and costings, of the status quo in the French system, its changes, the resources it deploys and its results, situating it, wherever data permit, at an international level. Each of the 35 themes comprises a double page with Figures, charts and commentary, featuring the latest available summary data on each subject.

€16

DEPP 005 74450
ISSN 1962-2546

Legal deposit
1st Quarter 2011
ISBN 978-2-11-128176-9

9 782111 281769

Ministère de l'Enseignement supérieur et de la Recherche
Ministry of Higher Education and Research.
DGESIP/DGRI-SIES Sub-Directorate for Information Systems and Statistical Studies
1, rue Descartes – 75231 Paris CEDEX 05
DEPP/Development and Publications Department
61-65, rue Dutot – 75232 Paris CEDEX 15