

Deloitte.

Researchers' Report 2013

Country Profile: Spain



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1. Key data

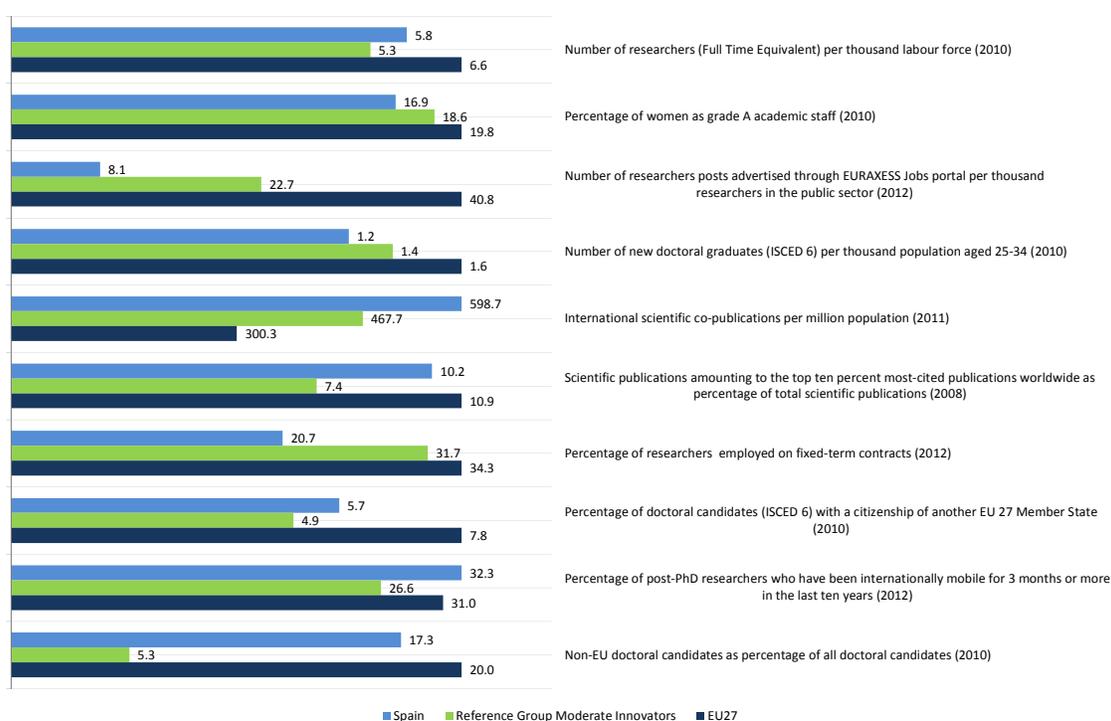
National R&D intensity target

“Spain has set a national R&D intensity target of 3%, within which public sector R&D investment would reach 1% and business R&D investment 2% of GDP by 2020. In 2011, Spanish R&D intensity was 1.33%. Public sector R&D intensity amounted to 0.64% and business R&D intensity 0.70%. Both values have fallen slightly in 2011 compared to 2010. (...) Private R&D expenditure has also been seriously affected by the economic crisis. Business R&D expenditure in real terms reached a peak in 2008. Spanish firms more than doubled their R&D expenditure in real terms over the period 2000-2008. However, following the economic crisis and liquidity constraints, business R&D investment fell by 6.27% in 2009 and by another 0.81% in 2010. Firms in food, automobiles, and construction, have undertaken the strongest cuts”.

Key indicators measuring the country’s research performance

The figure below presents key indicators measuring Spain’s performance on aspects of an open labour market for researchers against a reference group and the EU-27 average¹.

Figure 1: Key indicators – Spain



Source: Deloitte

Data: Eurostat, SHE Figures, EURAXESS Jobs Portal, UNESCO OECD Eurostat education survey, Innovation Union Scoreboard 2013, MORE2
 Notes: Based on their average innovation performance across 25 indicators, Czech Republic, Greece, Hungary, Italy, Lithuania, Malta, Portugal, Slovakia and Spain show a performance below that of the EU-27. These countries are the Moderate innovators².

Stock of researchers

The table below presents the stock of researchers by Head Count (HC) and Full Time Equivalent (FTE) and in relation to the active labour force.

Table 1: Human resources – Stock of researchers

Indicator	Spain	EU Average/Total
Head Count per 1 000 active labour force (2010)	9.70	10.17
Head Count (2010)	224 000	2 435 487
FTE per 1 000 active labour force (2010)	5.83	6.64

¹ The values refer to 2012 or the latest year available

² European Commission (2013), “Innovation Union Scoreboard 2013”

Indicator	Spain	EU Average/Total
Full time equivalent (FTE) (2010)	134 653	1 589 140

Source: Deloitte

Data: Eurostat

2. National strategies

The Spanish Government has put in place a range of measures aimed at training enough researchers to meet its R&D targets and at promoting attractive employment conditions in public research institutions. The table below presents key programmes and initiatives intended to implement the strategic objectives to train enough researchers to reach Spain's R&D targets, to promote attractive working conditions, and to address gender and dual career aspects.

Table 2: National strategies and laws

Measure	Description
At national level	
Strategies	
Spanish Science, Technology and Innovation Strategy (2013-2020)	The Science, Technology and Innovation Strategy is a 7-year strategy approved by the Spanish Government on 1 February 2013. It aims, among other overarching objectives, to acknowledge and promote talent in R&D&I and to promote researchers' employability. To achieve that goal, its specific objectives are to train researchers, to foster mobility and promote career development, and to multiply career opportunities for researchers.
State Scientific and Technological Research, and Innovation Plan (ongoing-2016)	The plan implements the Science, Technology and Innovation Strategy (see above) until 2016. Specifically aimed at training researchers, the plan includes measures to promote doctoral training in cooperation with industry, and entrepreneurship as well as to promote research management training. To foster mobility and promote career development, the plan encourages researchers from public institutions to spend some time working in the business sector. It also includes measures to attract high-level third country scientists.
University 2015 Strategy³ (2010)	The University 2015 Strategy is a Spanish Government initiative for modernising universities in Spain through the coordination of the autonomous regional university systems and the development of a modern Spanish University System. The Strategy promotes research activities and innovation in Spanish universities while encouraging training activities and knowledge transfer from the academic world to companies.
Strategy for the Sustainable Economy (2009)	The Strategy for the Sustainable Economy is a key government tool for achieving economic growth compatible with sustainable development. Key priorities of this national strategic reform programme were to increase investments in R&D and design a new innovation strategy.
Laws	
Law on a Sustainable Economy (2011)	The Law on a Sustainable Economy promotes R&D and innovation through the implementation of public procurement processes. It facilitates access to research patents and to commercial exploitation of research results. It also simplifies administrative procedures and promotes technical and professional training.
Law on Science, Technology and Innovation (2011)	The Law on Science, Technology and Innovation describes a stable and predictable science career for researchers as well as a more efficient and effective R&D system. The law contains provisions to foster partnerships between academia and industry and regulates mobility patterns between public entities and the private sector.

³ Available at: <http://www.educacion.gob.es/dctm/eu2015/2010-eu2015-ingles.pdf?documentId=0901e72b804260c4>

At regional level ⁴	
Plan for the Researcher's Career in Catalonia (2005)	The Plan for the Researcher's Career is an initiative at regional level aiming at developing strategies and instruments to increase the number of researchers in Catalonia, encourage researchers' career development in both the public and private sectors, and researchers' mobility between countries, and between academia and business.
The 2010-2013 Research and Innovation Plan (PRI), Catalonia	The Research and Innovation Plan is an initiative at regional level aiming to plan, promote and coordinate Catalonia's research and innovation. The Plan is also the fundamental instrument for maintaining the development of the 2008 Catalan Agreement on Research and Innovation (PNRI) ⁵ over this four-year period.

Source: Deloitte

3. Women in the research profession

Measures supporting women researchers in top-level positions

In 2010, the percentage of women grade A academic staff was 16.9% in Spain compared with 18.6% among the Innovation Union reference group and the EU average of 19.8%⁶.

Gender equality provisions are included in national laws, and universities and research institutions are obliged by the law to prepare and put in practice relevant action plans.

The Spanish government has created a "Women and Science Unit" aiming to promote gender aspects in science, technology and innovation by:

- Promoting the presence of women in all spheres of science, technology and innovation, based on their merits and skills, establishing mechanisms for eliminating bias, barriers and disincentives;
- Promoting the inclusion of gender as a cross-cutting category in scientific research, as well as specific research in the field of gender and women's studies;
- Promoting the inclusion of gender as a cross-cutting category in technological developments and innovation.

Measures to ensure a representative gender balance

The Law on Science, Technology and Innovation and the Equality Law (*Ley de Igualdad, 2007*) provide for gender balance in the nomination of evaluation committees, councils and bodies. Universities and public research institutions are bound by the Law to prepare and implement gender Action Plans. Incentives are given to institutions that can prove an improvement in gender balance figures.

Apart from the legislation, published reports provide information about gender statistics (e.g. 'Statistics on public tenders in R&D broken down by gender') while the Ministry of Economy and Competitiveness in 2011 published a White Paper on the situation of women in Spanish science (*Libro Blanco sobre la situación de las mujeres en la ciencia española*). The White Paper points out that gender equality in all spheres of social life and within the science and technology sector is a major issue for the Spanish economy and society. Despite the fact that there are more women university students than men and they do better academically, they make up fewer than 30% of those employed in some professions, such as engineering and experimental sciences.

⁴ The autonomous communities of Asturias and Catalonia are indicated as two examples of regional action throughout the country file. Examples of other R&D Regional Plans are: Andalucía: "Plan Andaluz de Investigación, Desarrollo e Innovación"; Aragón: "II Plan Autonómico de Investigación, Desarrollo y Transferencia de Conocimientos"; Asturias: "Plan de Ciencia, Tecnología e Innovación 2015"; Baleares: "Plan de ciencia, tecnología i innovació de les Illes Balears 2009-2012"; Canarias: "Plan Canario I+D+i 2011-2015"; Cantabria: "Plan Regional de I+D+i de Cantabria"; Castilla y León: "Estrategia Regional de Investigación Científica, Desarrollo Tecnológico e Innovación de Castilla y León 2007-2013"; Castilla- La Mancha: "Plan Regional de Investigación Científica, Desarrollo Tecnológico e Innovación de Castilla- La Mancha (2011-2015)"; Cataluña: "Pla de Recerca i Innovació de Catalunya"; Extremadura: "IV Plan Regional de I+D+i de Extremadura (PRI, 2010-2013)"; Galicia: "Plan Estratégico Galicia 2010-2014 Horizonte 2020"; Madrid: "Plan de Ciencia y Tecnología de la Comunidad de Madrid"; Murcia: "Plan de Ciencia, Tecnología e Innovación de la Región de Murcia 2011-2014"; Navarra: "Plan Moderna País Vasco: Plan de Ciencia, Tecnología e Innovación 2015" and C. Valenciana: "Plan General Estratégico de Ciencia y Tecnología de la Comunitat Valenciana (PGE CYT) 2010-2015"

⁵ The Catalan Agreement on Research and Innovation (Pacte Nacional per a la Recerca i la Innovació - PNRI), sponsored by the Minister for Innovation, Universities and Enterprise, is envisioned as a long-term and far-reaching agreement, with broad consensus among social, economic and political agents, designed to shape a competitive economy in a knowledge society founded on progress created by talent, science, technology and innovation

⁶ See Figure 1 "Key indicators – Spain"

Maternity leave

As is the case with social security benefits (see chapter 6 “Working conditions” for information on social security benefits), provisions for maternity leave are also included in all public R&D calls.

4. Open, transparent and merit-based recruitment

Recruitment system

The Spanish researchers’ recruitment system is somewhat segmented due to the fact that the Autonomous Communities have their own competencies for R&D issues.

Open recruitment in institutions

The table below presents information on open recruitment in higher education and public research institutions.

Table 3: Open recruitment in higher education and public research institutions

Do institutions in the country currently have policies to ...?	Yes/No	Description
– publish job vacancies on relevant national online platforms	Yes/No	Job vacancies are sometimes published online.
– publish job vacancies on relevant Europe-wide online platforms (e.g. EURAXESS)	Yes	-
– publish job vacancies in English	Yes	-
– systematically establish selection panels	-	-
– establish clear rules for the composition of selection panels (e.g. number and role of members, inclusion of foreign experts, gender balance, etc.)	Yes	-
– publish the composition of a selection panel (obliging the recruiting institution)	-	-
– publish the selection criteria together with job advert	Yes	-
– regulate a minimum time period between vacancy publication and the deadline for applying	Yes	-
– place the burden of proof on the employer to prove that the recruitment procedure was open and transparent	Yes	-
– offer applicants the right to receive adequate feedback	Yes	-
– offer applicants the right to appeal	Yes	-

Source: Deloitte

EURAXESS Services Network

In 2012, the number of researcher posts advertised through the EURAXESS Jobs portal per thousand researchers in the public sector was 8.1 in Spain compared with 22.7 among the Innovation Union reference group and an EU average of 40.8⁷.

Information on entry conditions, transfer of social security and pension contributions, accommodation, administrative assistance, etc. is available in the “Guide for Foreign Researchers in Spain” (2011)⁸, prepared by the Spanish National Science Foundation (FECYT) which is the Bridgehead Organization (national coordinator) of the Spanish Network. This guide is updated every two years and can be found on the Spanish EURAXESS portal⁹ which is also managed by FECYT.

⁷ See Figure 1 “Key indicators – Spain”

⁸ Available at:

<http://www.fecyt.es/fecyt/detalle.do?elegidaSiguiente=&elegidaNivel3=:SalaPrensa;publicaciones;guiasymanuales&elegidaNivel2=:SalaPrensa;publicaciones&elegidaNivel1=:SalaPrensa&tc=publicaciones&id=guia%20investigadores%20extranjeros%202011>

⁹ Available at: <http://www.euraxess.es/eng/services/guide-for-foreign-researchers>

The network of service centres provides personal assistance to newly arrived researchers, including (sometimes) welcome information packages. In Spain, it is not mandatory for public research bodies to publish online the positions available on the EURAXESS Jobs portal. Most institutions have their own on-line research job advertisement system, although many are related to the information provided on the EURAXESS Jobs portal.

In 2012, 166 Spanish organisations published a total of 720 positions on the EURAXESS Jobs portal. This represents 1.97% of the total number of jobs published in that year. The Spanish EURAXESS portal publicises the job positions that are advertised on the EURAXESS Jobs portal; it also offers information on national and European calls.

5. Education and training

Measures to attract and train people to become researchers

The JAE-intro programme, run by the Spanish National Research Council (CSIC), aims to introduce undergraduate students to research methods. It offers grants of up to two months at the Spanish National Research Council. In addition, the Ministry of Education has two programmes (*Arquímedes* and *Young Researchers*) that recognise undergraduate students who show outstanding research potential¹⁰.

In order to attract and train secondary school students to become researchers, the Ministry of Education organises national Olympics in mathematics, physics and chemistry. Together with the Spanish Foundation for Science and Technology (FEYCT), the Ministry of Education also organises summer campuses at university centres. In 2013, 1 808 students were due to take part in this programme.

In order to increase the number of students taking science to a doctoral level, the Spanish government has implemented the Master Plan for Mentoring and Guidance of Students. The Spanish government has not adopted specific policies to increase female representation. However, some Autonomous Communities have adopted measures to increase the number of women with doctorates. For example, in Asturias 64% of all PhD students are women.

Under the Law on Science, Technology and Innovation, all universities and public research institutions are required to implement Gender Balance Plans (see chapter 3 “Women in the research profession”) by setting concrete targets for pre-doctoral researchers (of both sexes).

Doctoral graduates by gender

The table below shows the number of doctoral graduates in Spain by gender as a ratio of the total population.

Table 4: Doctoral graduates by gender

Indicator	Spain	EU Average
New doctoral graduates (ISCED 6) per 1 000 population aged 25-34 (2010)	1.2	1.5
Graduates (ISCED 6) per 1 000 of the female population aged 25-34 (2010)	1.1	1.4
Graduates (ISCED 6) per 1 000 of the male population aged 25-34 (2010)	1.2	1.6

Source: Deloitte

Data: Eurostat

Funding of doctoral candidates

The table below presents the two different funding paths accessible to Spanish doctoral candidates.

¹⁰ For information on the FPU programme (*Formación de Profesorado Universitario*) and the FPI programme (*Formación de Personal Investigador*), see Table 5 below.

Table 5: Funding opportunities for doctoral candidates

Foundation	Description
Stipend/Grant	
FPU Programme, Ministry of Education (ongoing)	The Ministry of Education runs the FPU programme (<i>Formación de Profesorado Universitario</i>) to train future university professors, including the presentation of a doctoral thesis. It includes short-term visiting fellowships and tuition fee grants. In 2012, 50 of a total of 800 grants went to non-EU candidates. In addition, the programme funds 500 visiting fellowships for a period of between two and four months, and 40 visiting fellowships for a period of between six and nine months. In 2011, the number of FPU grants was 945, or 1.37% of all doctoral candidates.
Secretariat of State for Research, Development and Innovation, Ministry of the Economy and Competitiveness	The Secretariat of State for Research, Development and Innovation of the Ministry of the Economy and Competitiveness runs the FPI programme (<i>Formación de Personal Investigador</i>) to train researchers, including the presentation of a doctoral thesis. In addition, the programme funds visiting fellowships for a period of between two and six months, including tuition fees. In 2011, the number of FPI grants was 972, or 1.41% of all doctoral candidates.
The Spanish National Research Council (CSIC)	The Spanish National Research Council (CSIC) runs the JAE-Predoc programme to train researchers, including the presentation of a doctoral thesis. This programme provides grants lasting a period of three years for the recruitment of post-doc juniors to work for the Spanish National Research Council. In 2011, the number of JAE-Predoc grants was 154, or 0.22% of all doctoral candidates.
Other	Grants associated with research projects.
Employment contract	
These three programmes are based on a two-year grant + two-year contract. The new Spanish Law on Science, Technology and Innovation envisages replacing all grants with four-year employment contracts by 2014.	

Source: Deloitte

Measures to increase the quality of doctoral training

Doctoral studies include quality assurance, monitoring and follow up activities for the doctoral students. In an effort to increase the quality of doctoral training, the Spanish government makes awards to PhD programmes for excellence; it funds participation in international doctoral schools (within the International Campus of Excellence Programme that aims to improve the international competitiveness of Spanish university campuses); it also promotes public-private collaboration agreements, including training provisions for research staff.

Skills agenda for researchers

The Spanish Government has adopted the European Qualifications Framework (EQF). The Spanish Framework of Qualifications for Education (MECES) aims at structuring learning qualifications throughout the different levels of education. The framework is based on the Dublin Descriptors, which define the level of learning required for each stage of the higher education system (Bachelor, Master and Doctorate).

Training initiatives have been also developed at regional levels to improve researchers' employment skills and competencies, e.g. the Future Researchers' Workshops and the Project Management Workshops implemented by the Autonomous Community of Catalonia.

6. Working conditions

Measures to improve researchers' funding opportunities

The following table presents measures aimed at promoting researchers' funding opportunities at national and regional level.

Table 6: Measures to improve researchers' funding opportunities

Measure	Description
At national level	
Laws	
The Law on a Sustainable Economy (2011)	The Law on a Sustainable Economy promotes public procurement calls related to the promotion of R&D&I activities.
The Law on Science, Technology	The Law on Science, Technology and Innovation establishes two financing

Measure	Description
and Innovation (2011)	<p>agencies:</p> <ul style="list-style-type: none"> – The State Agency for Research (<i>Agencia Estatal de Investigación</i>): to promote new knowledge in scientific and technological research (planned); – The Centre for Industrial Technology Development (<i>Centro para el Desarrollo Tecnológico Industrial</i>): to promote innovation and experimental developments. <p>The law also covers the promotion of researchers' mobility between universities, public research institutions and regional organisations. Researchers are allowed to work for up to five years in other public or private, national or international organisations.</p>
Programmes	
Ramón y Cajal Programme (ongoing)	The <i>Ramón y Cajal</i> programme provides grants for a period of five years for the recruitment of candidates who have undertaken research placements at R&D centres other than those included in the programme for a period of at least 24 months after having obtained their PhDs, or who have been awarded full PhDs at foreign universities and have worked for at least 24 months after getting their PhD degree. Since 2012, the programme has also included financial support for the creation of permanent jobs. In 2012, the <i>Ramón y Cajal</i> programme increased the amount of each grant by 10%. In addition, the programme includes a EUR 100 000 sum per grant to support a long-term contract. In 2012, the number of <i>Ramón y Cajal</i> grants was 175.
Juan de la Cierva Programme (ongoing)	The <i>Juan de la Cierva</i> programme provides grants for a period of three years for the recruitment of researchers who have recently been awarded their PhD (or are about to get it). In 2012, the number of <i>Juan de la Cierva</i> grants was 225.
JAE-doc Programme (ongoing)	This programme provides grants lasting for a period of three years for the recruitment of post-doc juniors to work for the Spanish National Research Council. In 2011, the number of JAE-doc grants was 97.
Torres Quevedo Programme (ongoing)	This programme provides a subsidy to private institutions for three years in order to employ post-doc researchers for viability studies or experimental development projects, or industrial research activities. In 2012, the number of <i>Torres Quevedo</i> grants was 330.
At regional level¹¹	
Asturias Science, Technology and Innovation Plan (2006-2009)	This Plan in the Asturias Autonomous Community supported researchers' career development, including remuneration and working conditions.
Catalan Mobility Support Node	The Catalan Mobility Support Node is a EURAXESS Service Centre which aims to coordinate initiatives that foster the attraction of R&D&I talent and facilitate the mobility of talented researchers. The Node acts as a platform for the university institutions and research centres to help researchers and their families.
Procedure for the authorisation of the signed host agreements with foreign researchers, Catalonia	The procedure requires research organisations wishing to sign hosting agreements with foreign researchers to be previously authorised by the State or the Autonomous Community of Catalonia. The procedure aims in this way to improve researchers' working conditions.
Strategic Agreement to Promote Internationalisation of the Catalan Economy, the Strengthening of its Competitiveness and the Quality of Employment (2008-11)	The Strategic Agreement includes provisions related to researchers' salaries, the recruitment of international research staff and the return to Catalonia of Catalan researchers.

Source: Deloitte

Remuneration

Since 1984, researchers in public higher education institutions have been considered to be public sector employees and therefore have similar remuneration packages. They can also receive complements to their salary depending on their productivity (*complemento de productividad*). As there was an absence of performance evaluation criteria, the 2011 Law on Science, Technology and Innovation incorporates criteria for evaluating researchers' merits. Researchers are also eligible to further increase their income by receiving royalties from patents.

¹¹ This list is non-exhaustive. There a number of other measures at regional level.

For further information, see the new country profile on remuneration of researchers from the MORE2 study (forthcoming, on the EURAXESS website).

Researchers' Statute

Since 2006, *Real Decreto 63/2006* has guaranteed an in-training statute for researchers (*Estatuto del personal investigador en formación*). The Law on Science and Technology creates a more coherent researcher statute. Under that law, institutions are also required immediately to employ researchers at all levels of study by signing four-year employment contracts. The law also foresees the creation of special contracts for recruiting distinguished and well-known researchers to come and work in Spanish host institutions.

'European Charter for Researchers' & 'Code of Conduct for the Recruitment of Researchers'

The Law on Science, Technology and Innovation includes provisions on the adoption and implementation of the 'Charter and Code'. Additionally, the EURAXESS Network in Spain through 76 Service Centres (present in most Autonomous Communities), actively promotes the EURAXESS Rights initiative on the implementation of the 'Charter & Code'. So far, 50 institutions have endorsed the 'Charter & Code', and three have been awarded the 'HR Excellence in Research' logo.

Autonomy of institutions

The Spanish System of Science and Technology (SECyT) is an aggregation of systems of the general administration of the State and the Autonomous Communities, with the regional governments having competence for R&D. The 2011 Law on Science, Technology and Innovation improved mechanisms for coordination of the different national and regional policies. The law accords the Autonomous Communities the right to:

- Sign agreements between public and private agents;
- Subscribe to collaboration, cooperation and shared-management agreements with the State;
- Have their staff access benefits derived from industrial property; and
- Participate in Scientific and Technological Policy Councils.

Currently, only a few higher education institutions enjoy full autonomy to recruit their personnel despite the fact that they belong to the regional Autonomous Communities. This is the case of the research centres in Catalonia (CERCA Centres).

Career development

The Law on Science, Technology and Innovation creates a clear researchers' career path by regulating the contractual agreements signed between the researchers and the host institutions. Under this scheme, researchers are considered as civil servants, but the specificities of the research profession are taken into account. Moreover, researchers always have the option of choosing a non-civil servant career path¹².

In Spain, the career of researchers in public universities and research institutions begins through a first temporary pre-doctoral contract of up to four years ending with a PhD degree. Subsequently, researchers may sign contracts to access the SECyT and stay in the SECyT for up to five years. At that point, the researcher undergoes two performance evaluations. A positive evaluation will provide the researcher with access to a fixed contract and thus access to the lower levels of the civil service through internal promotion. Under the new law, when applying for public positions in Spain, candidates from all EU countries have the right to be assessed in English and not in Spanish/other recognised regional languages.

¹²In Spain, a researcher can be employed by an institution under one of the following schemes:

- Grants outside the Researchers In-training Statute (*Estatuto del personal investigador en formación, EPIF*);
- Grants/contracts within the Researchers In-training Statute (*Estatuto del personal investigador en formación*);
- Under regional pre-doctoral grants/contracts (2 year grant + 2 year contract) - sometimes also, under a 1+ 3 or 0 + 4 arrangements;
- Under temporary contracts up to 5 years;
- Under fixed employment contracts;
- As a civil servant.

Apart from this new law, which is applicable at national level, Autonomous Communities can develop individual plans related to the researchers' career (e.g. the Researchers' Career in Catalonia (*La carrera investigadora*)).

Shift from core to project-based funding

Researchers who are involved in project-based research have access to publicly funded contracts with clear descriptions and activities' planning. This is the case for the pre-doctoral FPI programmes (*Formación de Personal Investigador*), the post-doc *Ramon y Cajal* Programme, the FPU programme (*Formación de Profesorado Universitario*), the *Juan de la Cierva* programme, the JAE-doc programme and the *Torres Quevedo* programme (see chapter 8 "Mobility and international attractiveness").

Social security benefits (sickness, unemployment, old-age)

Researchers under employment contracts or receiving funding are granted social security coverage, including sickness and unemployment benefits. Old-age benefits are only available for PhD students under employment contracts, but not for pre-doctoral students receiving grants.

7. Collaboration between academia and industry

The following table summarises programmes designed to boost collaboration between academia and industry, and to foster doctoral training in cooperation with industry.

Table 7: Collaboration between academia and industry

Measure	Description
<i>At national level</i>	
ERDF-Inninterconecta Programme (ongoing)	The programme finances integrated experimental development projects, of a large-scale, strategic nature, whose aim is the development of new technologies in forward-looking areas of technology with economic and commercial prospects at international level and representing an important technological and industrial advance for the regions receiving funding from the "R&D&I by and for the benefit of Companies - Technology Fund" Operating Programme.
INNCORPORA programme (Technicians) (ongoing)	This programme funds the hiring of technicians by the private sector for a minimum of one year and a maximum of three. In 2012, the total budget was EUR 91.2 million (EUR 1.2 million as grants and the rest of the amount as subsidised loans). The Inncorpora programme allows for mobility between the public and the business sector. The aim of the programme is to engage highly-skilled staff in private companies (as well as technology centres, science parks and business associations) and support knowledge transfer between academia and the business sector.
INNFLUYE sub-programme (ongoing)	INNFLUYE funds the creation and strengthening of Spanish Technology Platforms, i.e. public-private groups which work on developing and updating R&D agendas and innovation priorities for their particular sector. The total budget allocated for 2013 is EUR 1.5 million.
INNFACTO (ongoing)	INNFACTO fosters steady cooperation between research institutions and firms. It supports collaborative experimental development projects focused on market demand. Projects are multi-year and funded with grants and subsidised loans. In 2012, the total budget was EUR 851.7 million.
Innpronta Programme (ongoing)	The Innpronta Programme falls under the Centre for the Development of Industrial Technology (<i>Centro para el Desarrollo Tecnológico Industrial</i>). It offers grants to promote stable public-private cooperation in R&D. The programme finances large industrial research projects of a strategic nature in the following priority areas: energy, the environment and climate change, biotechnology, health and food. The multi-year grants are for the development of new technologies in forward-looking areas with economic and commercial prospects at international level. The budget was EUR 102 million for 2011.
The CENIT Programme (ongoing)	The CENIT Programme is part of the INGENIO 2010 initiative launched by the government in 2006 to stimulate cooperation in R&D&I among businesses, universities, public or private research and technology centres. CENIT has the following characteristics: i) industrial research projects with mandatory and contractual cooperation between companies and public, private or other research groups; ii) at least four independent firms (two of them SMEs) and two public research institutions; iii) minimum commitment of four years; iv) minimum budget of EUR 20 million; and v) at least 20% of the budget must be developed by research organisations or technology centres

Measure	Description
At national level	
	under contract.
	Managed by the CDTI, CENIT is a competitive program with grants of up to 50% of the budget of the projects. There were six calls during the period 2006-2010 with EUR 1 072 million of grants. The last projects will be completed in 2014.
Torres Quevedo Programme (ongoing)	This programme gives a subsidy to private institutions for three years in order to employ post-doc researchers for viability studies or experimental development projects or industrial research activities. In 2012, the number of Torres Quevedo grants was 330.
At regional level	
Talent Empresa Programme (TEM Grants), Catalonia	The TEM Grants target Catalonia's SMEs, technology parks, etc. to encourage them to employ researchers to work for industry.

Source: Deloitte questionnaire and Ministry of Economy and Competitiveness website: www.micinn.es/stfls/MICINN/Investigacion/FICHEROS/PROGRAMA_TRABAJO_011_12-01-11.pdf

The Science, Technology and Innovation Law includes a section focusing on human resources dedicated to research. Its main new features include the ambitious task of regulating mobility between public entities and the private sector, creating specific employment contracts for researchers and the undertaking, in a clearly defined manner, of performance evaluations for career professionals in the public research entities of the General State Administration.

8. Mobility and international attractiveness

In 2010, the percentage of doctoral candidates (ISCED 6) with citizenship of another EU-27 Member State was 5.7% in Spain compared with 4.9% among the Innovation Union reference group and an EU average of 7.8%¹³. In the same year, the percentage of non-EU doctoral candidates as a percentage of all doctoral candidates was 17.3% in Spain compared with 5.3% among the Innovation Union reference group and an EU average of 20.0%¹⁴.

Measures aimed at attracting and retaining 'leading' national, EU and third country researchers

The table below summarises key measures aimed at attracting and retaining leading national, EU and third-country researchers.

Table 8: Measures to attract and to retain leading national, EU and third-country researchers

Measure	Description
Ikerbasque – Basque Foundation for Science (Basque Country) (ongoing)	The Basque Foundation launches calls to attract and retain distinguished researchers, regardless of their nationality.
“Clarín” de ayudas postdoctorales del Principado de Asturias Programme (Movilidad B) (ongoing)	The Clarín programme aims to attract researchers currently working in foreign institutions to pursue a researcher career in the Autonomous Community of the Principality of Asturias.
ICREA Programme (Catalonia) (ongoing)	The ICREA programme aims to attract researchers from around the world, based on their scientific talent, to move to and work in Catalonia.
Ramón y Cajal Programme (ongoing)	The Ramón y Cajal programme provides grants lasting for a period of five years for the recruitment of candidates who have undertaken research placements at R&D centres other than those included in the programme for a period of at least 24 months after having obtained their PhDs, or who have been fully awarded PhDs in foreign universities and have worked at least 24 months after getting their PhD degree. Since 2012, the programme has also included financial support to the creation of jobs on a permanent basis. In 2012, the Ramón y Cajal programme increased the amount of each grant by 10%. In addition, it includes a EUR 100 000 sum per grant to support a long-term contract. In 2012, the number of Ramón y Cajal grants was 175.

¹³ See Figure 1 “Key indicators – Spain”

¹⁴ Ibid.

Measure	Description
Juan de la Cierva Programme (ongoing)	The <i>Juan de la Cierva</i> programme provides grants lasting a period of three years for the recruitment of researchers who have recently been awarded their PhD (or are about to get it). In 2012, the number of Juan de la Cierva grants was 225.

Source: Deloitte

Finally, the Spanish Government is planning to create a programme at national level (an extension of the existing *Severo Ochoa Programa* in Asturias – see below) which will target high-level scientists, regardless of their nationality.

Inward mobility (funding)

In Spain, the major obstacles to researchers' mobility are either legal problems related to visa acquisition or language barriers, especially in connection with administrative procedures. In 2009, the government implemented the Scientific Visa Directive via the Spanish Immigration Act 2/2009.

The table below summarises key measures aimed at supporting researchers' inward mobility.

Table 9: Measures supporting researchers' inward mobility

Measure	Description
Acción Estratégica de Salud Sara Borrell¹⁵ (ongoing)	The Sara Borrell Action is part of the Strategic Health Programme. It supports health research centres wanting to employ national or foreign doctors with experience in health research for a maximum three-year period.
Acción Estratégica de Salud Rio Hortega¹⁶ (ongoing)	The Rio Hortega Action is part of the Strategic Health Programme and aims at engaging health professionals in research teams to obtain experience in research.
Linea Incorpora -Torres Quevedo¹⁷ (ongoing)	This budget line grants a subsidy to private companies, technology centres, business associations or scientific parks for a maximum of three years in order to employ national or foreign researchers for experimental developments, viability studies or industrial research. After the period of three years, the contract must become permanent.
Programme I3 - Incentives for the incorporation and strengthening of research activity (ongoing)	Programme I3A supports research institutions to permanently employ national or foreign post-docs students.
Mobility of Foreign University Lecturers or Researchers in Spanish Centres¹⁸ (ongoing)	This programme comes under the Ministry of the Economy and Competitiveness. It targets foreign researchers and lecturers coming to Spain, either during a sabbatical year (for senior researchers or professors) or by signing employment contracts (for young doctors) for a period of nine to eighteen months.
Juan de la Cierva Programme¹⁹ (ongoing)	The Juan de la Cierva subprogramme promotes a contract for post-doc juniors to be integrated and work in research teams for a maximum of three years (see also table 8).
SIC-JAE-Doc²⁰ (ongoing)	Under the CSIC-JAE-Doc programme, the Spanish National Research Council (CSIC) offers three-year postdoctoral contracts to national and foreign post-doctoral researchers, including the preparation of a PhD thesis.
Ramón y Cajal Programme²¹ (ongoing)	The Ramón y Cajal subprogramme promotes a contract for post-doc seniors to be integrated and work in research teams for a maximum of five years (see also table 8).
1. Contrato de acceso al Sistema Español de Ciencia, Tecnología e Innovación (ongoing) 2. Contrato de investigador distinguido (ongoing)	These are two types of contract – access to the SECyT and the distinguished researcher contract – developed under the Spanish Law on Science, Technology and Innovation. They are open to both nationals and foreign researchers. The first is for researchers who obtained their PhD in the previous five years.

Source: Deloitte

¹⁵ Ministry of Economy and Competitiveness

¹⁶ Ibid

¹⁷ Ibid

¹⁸ National Human Resources Mobility Programme, Ministry of Economy and Competitiveness

¹⁹ Part of the National Programme for Recruitment and Incorporation of Human Resources - Programa Nacional de Contratación e incorporación de RRHH, Ministry of Economy and Competitiveness

²⁰ Spanish National Research Council (CSIC)

²¹ Ibid

Outbound mobility

The table below presents measures aimed at encouraging researchers to spend some time in another country.

Table 10: Measures supporting researchers' outbound mobility

Measure	Description
At national level	
FPI, FPU and JAE pre-doctoral grants	See chapter 5 "Education and training".
Human Resources Subprogramme Salvador Madariaga (ongoing)	The Ministry of Education runs this programme that funds researchers wanting to obtain a PhD at the European University Institute in Florence. The funding is for 48 months (24 month grant and another 24 month employment contract). In 2012, the total budget was EUR 391 000.
Postdoctoral mobility in foreign centres (ongoing)	This subprogramme for post-doctorates covers a maximum stay of one month per year. It includes post-doc positions offered by the Fulbright Commission, the <i>Cátedras Príncipe de Asturias</i> (Prince of Asturias Chairs) and the International Computer Science Institute.
Mobility of Spanish university lecturers and researchers in foreign centres (ongoing)	In this programme, senior researchers with permanent positions in a public research institution can apply to spend three to twelve months at a foreign institution. Young researchers with a temporary or permanent contract in a public research institution can also apply for a four- to ten-month stay at a foreign institution. In 2012, the total budget was EUR 7.59 million.
Subprogramme of specialisation in International Organisations (ongoing)	This subprogramme funds researchers, technologists, and science and technology managers to spend one to two years in an international scientific institution in another country. Following this period, the beneficiary has to develop a one-year project in a Spanish public research centre or technology-based enterprise.
At regional level	
"Clarín" de Ayudas Postdoctorales del Principado de Asturias Programme (Modalidad A) (ongoing)	The <i>Clarín</i> programme of the Principality of Asturias funds post-doctoral researchers to spend a maximum of 24 months in foreign centres of excellence to further develop their specialisation (see also table 8).
"Severo Ochoa" del Principado de Asturias Programme (ongoing)	The <i>Severo Ochoa</i> Programme of the Principality of Asturias funds pre-doctoral students (two year grant and a two year contract) with additional funding for annual short stays of a maximum of 60 days.

Source: Deloitte

Promotion of 'dual careers'

There are no specific national public programmes for the promotion of researchers' dual careers in Spain. However, as part of the transposition of the Scientific Visa Package, researchers with a hosting agreement can make use of a fast-track visa procedure via the *Unidad de Grandes Empresas y Colectivos Estratégicos* which can process the necessary family residence (temporary) and work permits (linked to the researcher's main permit).

Portability of national grants

Publicly funded R&D grants and fellowships provided by the Ministry of the Economy and Competitiveness are always linked to Spanish R&D centres. The legal and grant beneficiaries are the Spanish institutions and consequently, the grants are not portable to other EU countries. However, the research can be carried out in foreign countries, subject to the terms of the relevant call.

Access to cross-border grants

All relevant calls published by the Ministry of Economy and Competitiveness are open to researchers from all around the world without any restriction as to nationality. The only prerequisite is that the host R&D centre needs to be Spanish.

The percentage of foreign researchers winning an R&D Call in 2010 was:

- *Ramón y Cajal* programme: 25%;
- *Juan de la Cierva* programme: 31%;
- *Formación de Personal Investigador* programme: 16%;
- *Torres Quevedo* (postdoctoral contracts in private companies) programme: 13%.